

# **Bushfire Risk Assessment 710 Mt Ridley Road Mickleham**



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**xwb consulting**  
**Town Planning and Bushfire Consultants**



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## 1. Introduction

XWB Consulting has been engaged by Glossop Town Planning to prepare a bushfire risk assessment for a proposed school at 710 Mt Ridley Road Mickleham.

While the land is not in a Bushfire Management Overlay under the Hume Planning Scheme, it is in a Designated Bushfire Prone Area under the Building Regulations 2018. State planning policy requires in a bushfire prone area designated in accordance with regulations made under the *Building Act 1993*, bushfire risk should be considered when assessing a planning application for an education centre.

The bushfire assessment has been prepared by:

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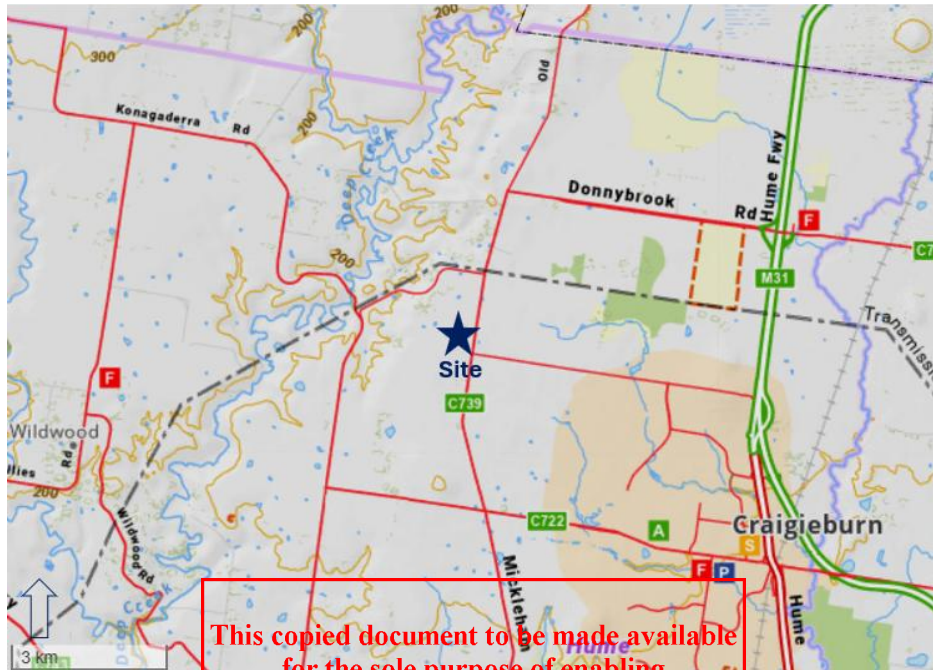
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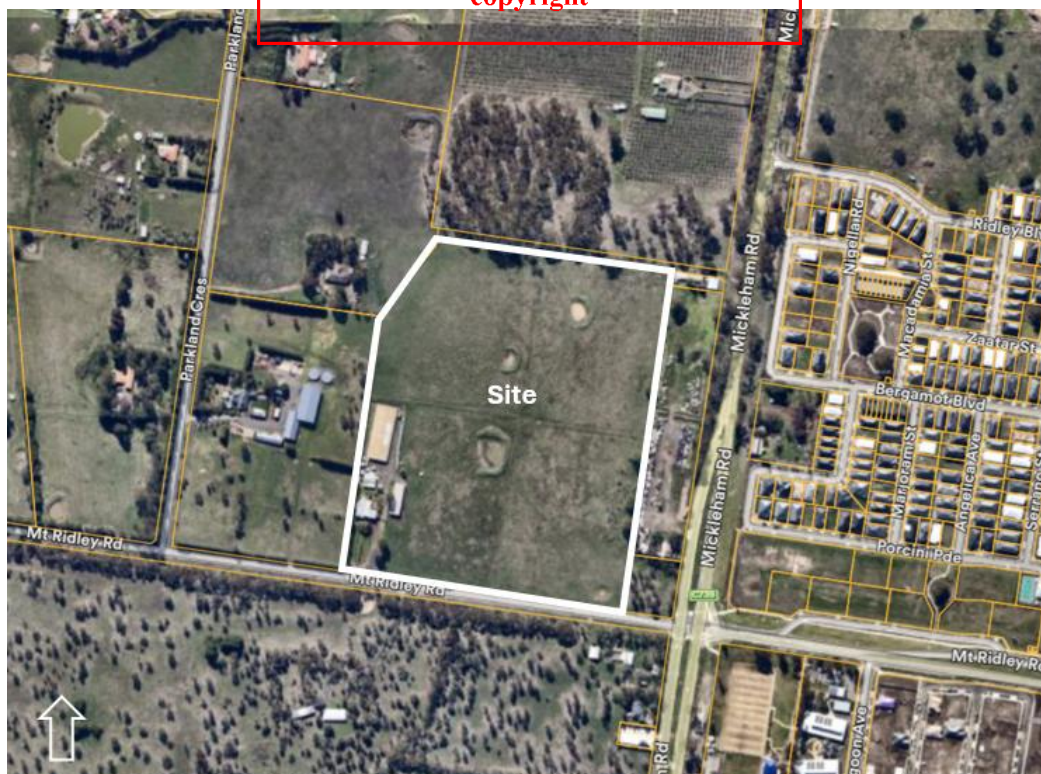
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## 2. Site Description

The site is located on the north side of Mt Ridley Road approximately 60m west of Mickleham Road as shown on the locality plan below:



The site has an area of 13.13ha and mainly comprises flat open paddocks. There is an existing dwelling and a number of relocatable buildings in the south west corner of the site. Mt Ridley Road is a rural standard road with a sealed pavement. The site is shown on the aerial photograph below:



The site is immediately to the west of the urban area on the east side of Mickleham Road. To the north and west are small rural properties / rural living properties. To the south are larger rural properties.

The site is within a Green Wedge Zone under the Hume Planning Scheme. The site is not within a Bushfire Management Overlay under the Hume Planning Scheme but is within a Bushfire Prone Area under the Building Regulations 2018.

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## 4. Planning Policy Framework

### 4.1 State Planning Policy

State planning policy in relation to bushfire planning is set out in Clause 13.02-1S of the planning scheme. The objective of the state policy is to strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.

Strategies to achieve this objective are:

#### Protection of human life

Give priority 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 the consideration of bushfire risk in decision-making at all stages of the planning process.

#### Bushfire hazard identification and assessment

Identify bushfire hazard and undertake appropriate risk assessment by:

- Applying the best available science to identify vegetation, topographic and climatic 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 in planning schemes 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 the conditions in the landscape within 20 kilometres and potentially up to 75 kilometres from a site;
  - Local conditions - meaning conditions in the area within approximately 1 kilometre from a site;
  - Neighbourhood conditions - meaning conditions in the area within 400 metres of the site;
  - The site for the development.
- Consulting with emergency management agencies and the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.
- Ensuring that strategic planning documents, planning scheme amendments, planning permit applications and development plan approvals properly assess bushfire risk and include appropriate bushfire protection measures.
- Not approving development where a landowner or proponent has not satisfactorily demonstrated that the relevant policies have 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:

- Directing population growth and development to low risk locations, being those locations assessed as having a radiant heat flux of less than 12.5 kilowatts/square metre under *AS 3959-2018 Construction of Buildings in Bushfire-prone Areas* (Standards Australia, 2018).
- Ensuring the availability of, and safe access to, areas assessed as a BAL-LOW rating under *AS 3959-2018 Construction of Buildings in Bushfire-prone Areas* (Standards Australia, 2018) where human life can be better protected from the effects of bushfire.
- Ensuring the bushfire risk to existing and future residents, property and community infrastructure will not increase as a result of future land use and development.
- Achieving no net increase in risk to existing and future residents, property and community infrastructure, through the implementation of bushfire protection measures and where possible reduce bushfire risk overall.
- Assessing and addressing the bushfire hazard posed to the settlement and the likely bushfire behaviour it will produce at a landscape, settlement, local, neighbourhood and site scale, including the potential for neighbourhood-scale destruction.
- Assessing alternative low risk locations for settlement growth on a regional, municipal, settlement, local and neighbourhood basis.
- Not approving any strategic planning document, local planning policy, or planning scheme amendment that will result in the introduction or intensification of development in an area that has, or will on completion have, more than a BAL-12.5 rating under AS 3959-2018.

### **Areas of high biodiversity conservation value**

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 of high biodiversity conservation value.

### **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 services 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.

### Policy guidelines

Consider as relevant:

- Any relevant approved State, regional and municipal fire prevention plan.

### Policy documents

Consider as relevant:

- *AS 3959-2018 Construction of Buildings in Bushfire-prone Areas* (Standards Australia, 2018)
- *Building in bushfire-prone areas - CSIRO & Standards Australia* (SAA HB36-1993, 1993)
- Any bushfire prone area map prepared under the *Building Act 1993* or regulations made under that Act

## 4.2 Local Planning Policy

Other recognition that there is a risk from grassfires, there is no local planning policy in the Hume Planning Scheme in relation to bushfire planning.

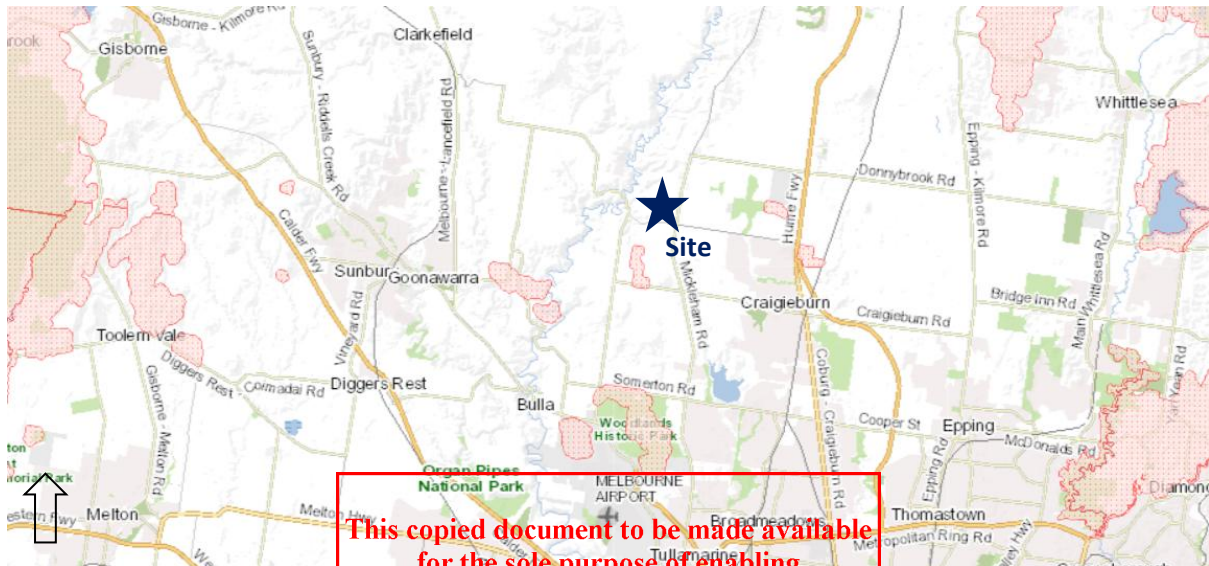
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## 5 Bushfire Risk Assessment

### 5.1 Bushfire Designation

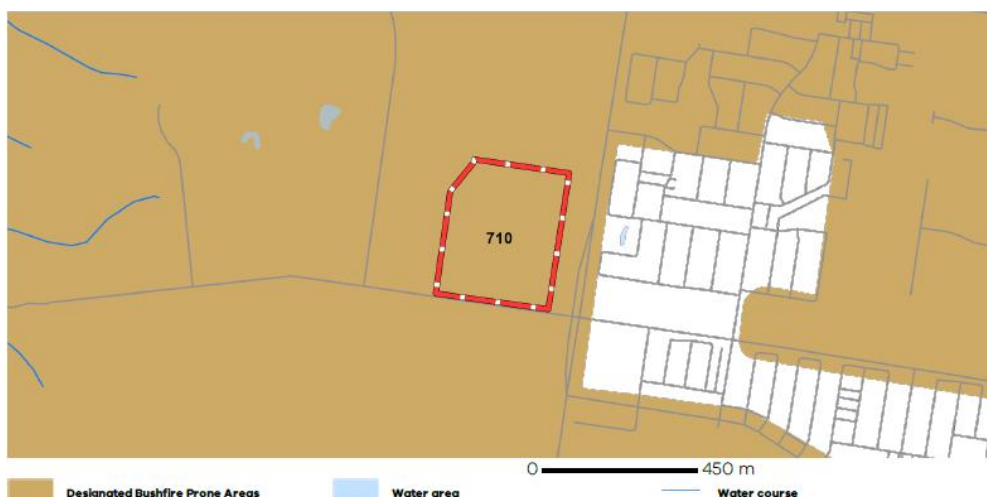
The site is not within a Bushfire Management Overlay under the Hume Planning Scheme as shown on the plan below:



 Bushfire Management Overlay

The Bushfire Management Overlay is applied in planning schemes to areas where the extent of vegetation can create an extreme bushfire hazard. Whilst there are a number of small pockets of bushland in the Bushfire Management Overlay closer to the site, the larger continuous area within the Bushfire Management Overlay are located greater than 20km to the west at Toolern Vale or greater than 20km to the east at Whittlesea. The closest land within the Bushfire Management Overlay is a small pocket of bushland north of Craigieburn Road approximately 1.5km to the south west.

The site is included with a Bushfire Prone Area under the Building Regulations 2018 as shown on the plan below:



This designation is of relevance given state planning policy requires 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 subdivisions of more than 10 lots.

#### 4.3 Bushfire Site Hazard Assessment

A bushfire site hazard site assessment as required under the planning scheme describes the bushfire hazard within 150 metres of the proposed development (as defined by the concept plan). The description of the hazard is prepared in accordance with Sections 2.2.3 to 2.2.5 of AS3959:2018 Construction of Buildings in Bushfire Prone Areas (Standards Australia) excluding paragraph (a) of section 2.2.3.2. Photographs or other techniques may be used to assist in describing the bushfire hazard. The plan below shows the bushfire hazard within 150m of the site.



The land to the north of the school development comprises open paddocks within the site which would be classified as grassland under AS3959. The slope of the land is flat.

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Looking south east across the site toward Mt Ridley / Mickleham Road intersection

To the west are open paddocks around a dwelling and sheds fronting Parkland Crescent. The open paddocks would be classified as grassland under AS3959 and the slope of the land is flat. The managed area around the dwelling and sheds would be classified as low threat vegetation under AS3959.

To the south, the land along Mt Ridley Road is managed and would be classified as low threat under AS3959. To the south of Mt Ridley Road are paddocks with scattered small trees which appear to have been planted. Conservatively the vegetation would be classified as woodland under AS3959 albeit the fuel loading is likely to be at the lower end of the scale. The slope of the paddocks comprising the woodland is flat.

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Looking east along Mt Ridley Road adjoining the site

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Woodland area to the south of Mt Ridley Road

To the east is Mickleham Road with urban development to the east of Mickleham Road and managed properties to the west of Mickleham Road including a car yard. The vegetation would be classified as low threat under AS3959.

The bushfire site hazard assessment is summarised in the following table:

|                                   | North     | West                    | South                  | East       |
|-----------------------------------|-----------|-------------------------|------------------------|------------|
| Vegetation type                   | Grassland | Grassland<br>Low threat | Low threat<br>Woodland | Low threat |
| Slope under classified vegetation | Flat      | Flat<br>n/a             | n/a<br>Flat            | n/a        |
| Distance to classified vegetation | 0m        | 0m<br>n/a               | n/a<br>20m             | n/a        |

#### 4.5 Bushfire Landscape Risk

The landscape within 20km of the site comprises mainly open paddocks with pockets of bushland and urban development particularly to the south and east and the Sunbury Township to the west. More substantive areas of forest are located greater than 20km from the site at the Lerderderg State Park to the west and Kinglake National Park to the east.

In south eastern Australia, the greatest bushfire threat occurs when there is a strong dry north westerly wind followed by a south westerly wind change. Under these conditions there is the potential for long run grassfires from the north west and south west. Overall the landscape bushfire risk to the site is considered to be low to moderate particularly given the proximity to the urban area to the east.

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## 4.5 Proposed bushfire risk response

On balance, the site is considered to be a low to moderate risk location in terms of bushfire risk due to the potential for long run grassfires from the north west and south west. State planning policy identifies low risk locations as being those locations assessed as having a radiant heat flux of less than 12.5 kilowatts/square metre under AS 3959-2018 Construction of Buildings in Bushfire-prone Areas. The National Construction Code (Spec 43) also identifies that school buildings should not be exposed to a radiant heat flux of greater than 10 kilowatts/square metre. To achieve a radiant heat flux of no greater than 10 kilowatts/square metre, and be classified as low risk, the following separation distances are required:

| Aspect | Vegetation | Slope | Sep distance | Comments                                                                            |
|--------|------------|-------|--------------|-------------------------------------------------------------------------------------|
| North  | Grassland  | Flat  | 22.8m        | Accommodated by the sports fields / courts shown on the concept plan.               |
| West   | Grassland  | Flat  | 22.8m        | Accommodated by 49.3m setback to school buildings.                                  |
| South  | Woodland   | Flat  | 39.4m        | Accommodated by Mt Ridley Road and the proposed access / carparking for the school. |
| East   | Low threat | n/a   | 10m          | 10m is the property boundary setback under NCC Spec 43 which is well exceeded.      |

(Separation distances calculated using the Flamesol calculator developed by the Fire Protection Association Australia)

The concept plan for the school including the sports fields / courts to the north and carpark to the south is a good design to mitigate bushfire risk. Landscape areas within the separation distances should be landscaped to achieve a minimal fuel condition under AS3959. Buildings should be constructed in accordance with the National Construction Code (Spec 43).

Water supply to the school by reticulated supply, static supply or a combination of both should be sufficient to provide for suppression of a building fire at the school as well as providing water for the protection of the school in the event of a bushfire / grassfire in the surrounding landscape.

In terms of state planning policy:

- The protection of human life is prioritised by achieving a low risk location having regard to the surrounding landscape and separation distances from classified vegetation.
- The school is located in close proximity to urban areas on the east side of Mickleham road with a negligible bushfire risk which could be readily accessed in the event of a bushfire ./ grassfire if required. The school buildings would provide a suitable location to shelter in place.
- The bushfire risk has been assessed and identified through this report.
- There is no impact on biodiversity values as a result of providing bushfire protection measures.
- Appropriate bushfire protection measures have been identified within this report.

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## 7 Conclusion

The proposal involves the development of a primary and secondary school on the site. Based on the assessment undertaken, the bushfire risk is considered to be low. The bushfire risk to the site is from the surrounding grassland landscape to the north west and south west.

Separation distance should be provided for school buildings from classified vegetation to ensure the buildings are not exposed to a radiant heat flux of greater than 10 kilowatts/square metre as required by the National Construction Code (Spec 43). Landscape areas within the separation distances should be landscaped to achieve a minimal fuel condition under AS3959 and buildings should be constructed in accordance with the National Construction Code (Spec 43).

Water supply to the school by reticulated supply, static supply or a combination of both should be sufficient to provide for suppression of a building fire at the school as well as providing water for the protection of the school in the event of a bushfire / grassfire in the surrounding landscape.

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