

## MEMO

**To:** Jane Kelly, Director, Urbis  
Kenton Cox, Architect

**From:** ERA Planning & Environment

**Date:** 21 July 2021

**Re:** Bushfire Management Requirements - subdivision  
Poulters Road, New Norfolk

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### 1. Proposal

Subdivision of land within a bushfire prone area must be able to demonstrate how all lots can accommodate adequate hazard management areas, building areas, firefighting water supply and vehicular access. This protection must be provided to all lots in each stage of a staged subdivision.

All lots in the proposed subdivision are within 100 m of bushfire-prone vegetation equal to or greater than 1 ha. Accordingly, the site is within a 'bushfire prone area' as defined under Clause E1.3 of the Bushfire-Prone Areas Code (the code) of the *Derwent Valley Interim Planning Scheme 2015* (planning scheme) and a Bushfire Assessment Report prepared in accordance with the requirements of this code must be submitted with the subdivision application.

The final subdivision layout is yet to be determined, however based on the master plan provided and prepared by Kenton Cox Architect<sup>1</sup> (attached) it is understood that approximately 329 lots will be proposed, access to the site will be from Glebe Road and Poulters Road and the subdivision will include large areas of managed vegetation including an ephemeral waterway located centrally within the site. This bushland area is proposed to be managed in a minimum fuel condition and used as a recreation parkland with integrated walking trails.

The concept plan includes a fire trail following the external boundaries of the site that are adjacent to bushfire prone vegetation.

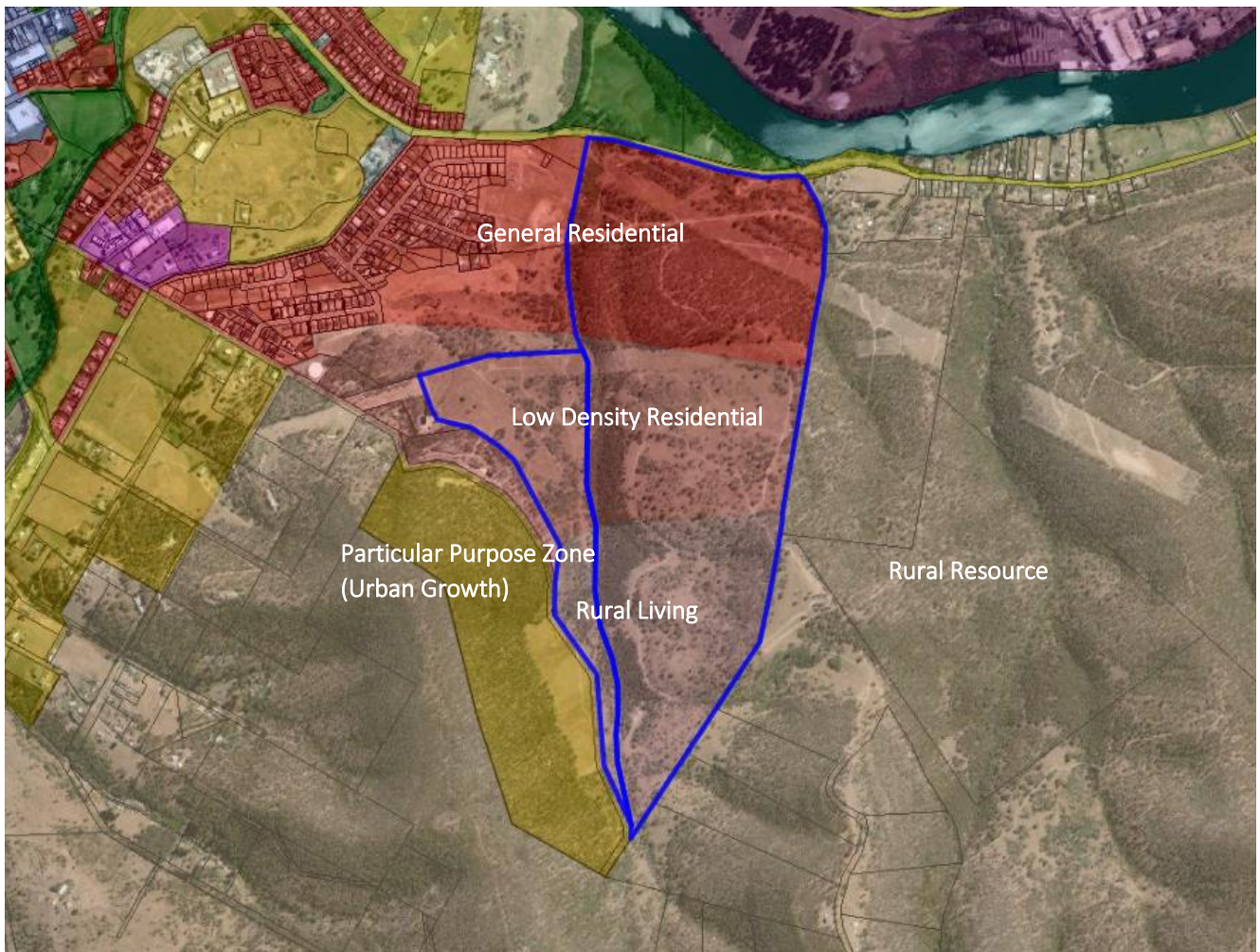
### 2. Site area and surrounds

The site is comprised of two titles (refer Figure 1) and is located to the southeast of the historical town of New Norfolk, adjacent to the Lyell Highway. The site is a continuation of an existing subdivision located between Glebe Road, Lyell Highway and Poulters Road. The site is zoned General Residential, Low Density Residential and Rural Living; however, it is understood that this zoning is proposed to change. The site is adjacent to a parcel of land zoned Particular Purpose (Urban Growth) to the southeast with the remaining adjacent land being zoned Rural Resource.

The site slopes upwards from Lyell Highway, progressively getting steeper towards the valley of the unnamed watercourse traversing the site. The site itself contains a mixture of unmanaged grassland, woodland and forest vegetation with the adjoining sites being a mixture of woodland and forest. See section 4 for further detail.

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<sup>1</sup> BUSHFIRE MANAGEMENT Date: 4/06/2021 Drawing No.: SK R 05 Issue: H

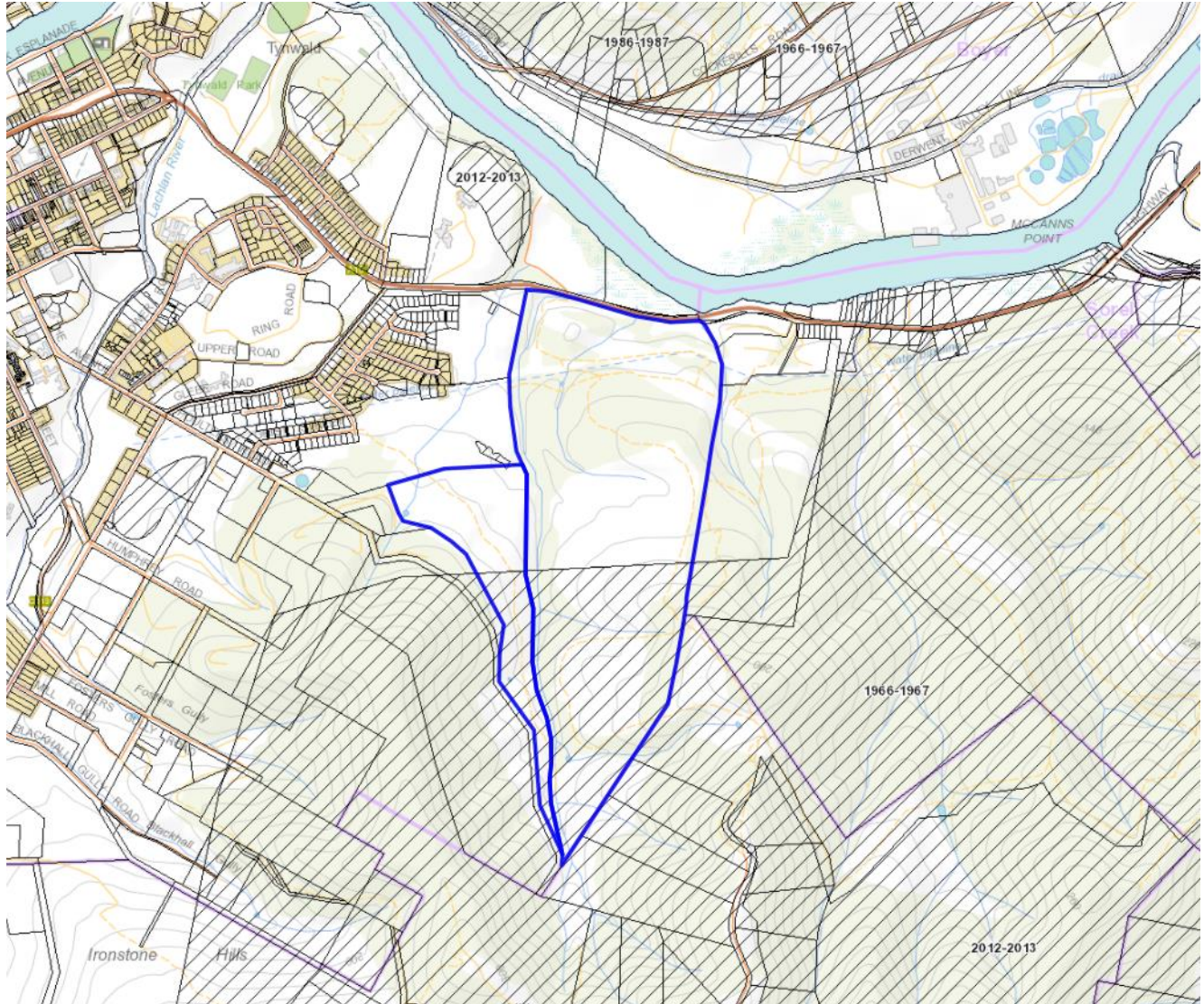


*Figure 1: Site shown in blue with zoning under the planning scheme (source: LISTmap 4 June 2021)*



### 3. Fire history

There have been several recorded fires both on the site and within proximity to the site over the past 50 years (see Figure 2).



**Figure 2: Fire history of area (site shown in blue outline) (source: LISTmap 4 June 2021)**

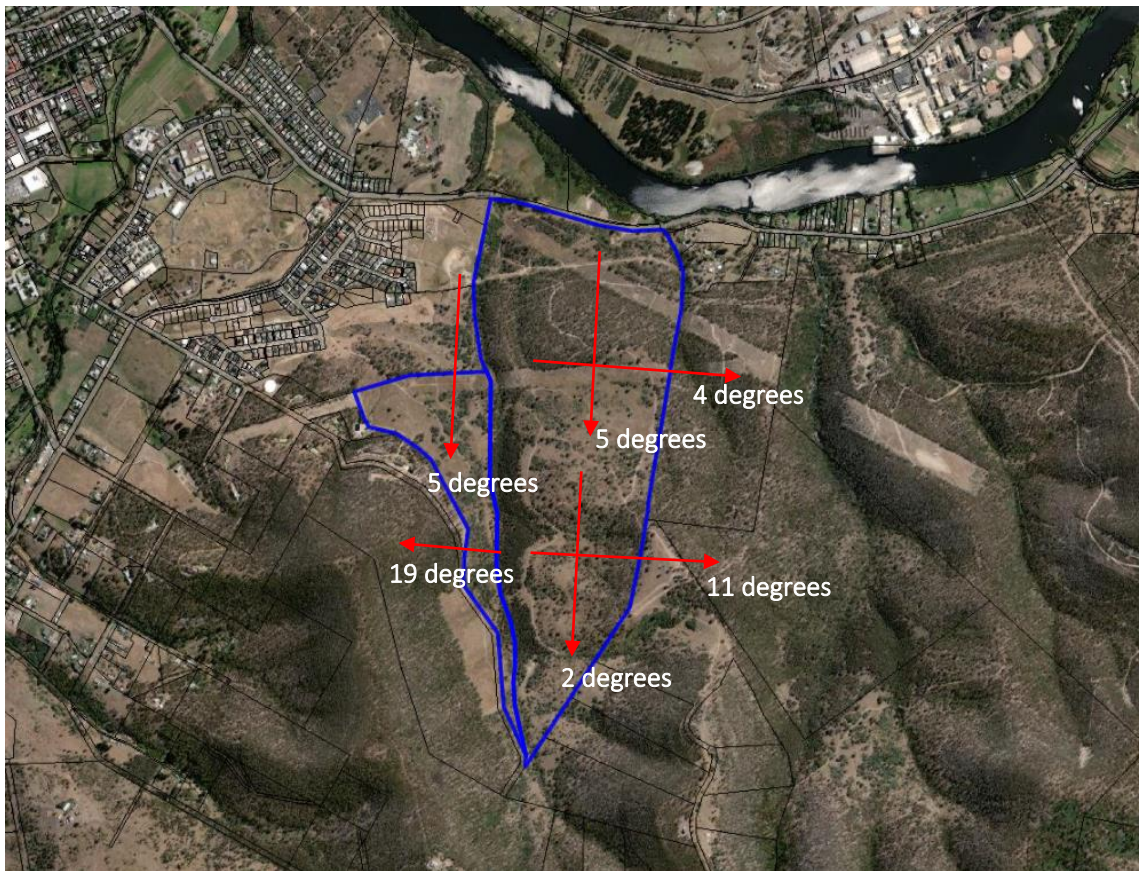
### 4. Slope and vegetation type

The key factors affecting bushfire behaviour are fuel, weather conditions and topography. *AS 3959-2018 Construction of Buildings in Bushfire-Prone Areas* (AS 3950-2018) provides categories for classifying vegetation based on structural characteristics. The Bushfire Attack Level (BAL) determines the likely exposure to uncontrolled bushfire hazard. The method for determining BAL ratings is outlined in AS 3959-2018 (Table 2.6 – Fire Danger Index 50). The assessment for the proposed subdivision will rely on Method 1, which considers vegetation type, distance from hazardous vegetation and effective slope.

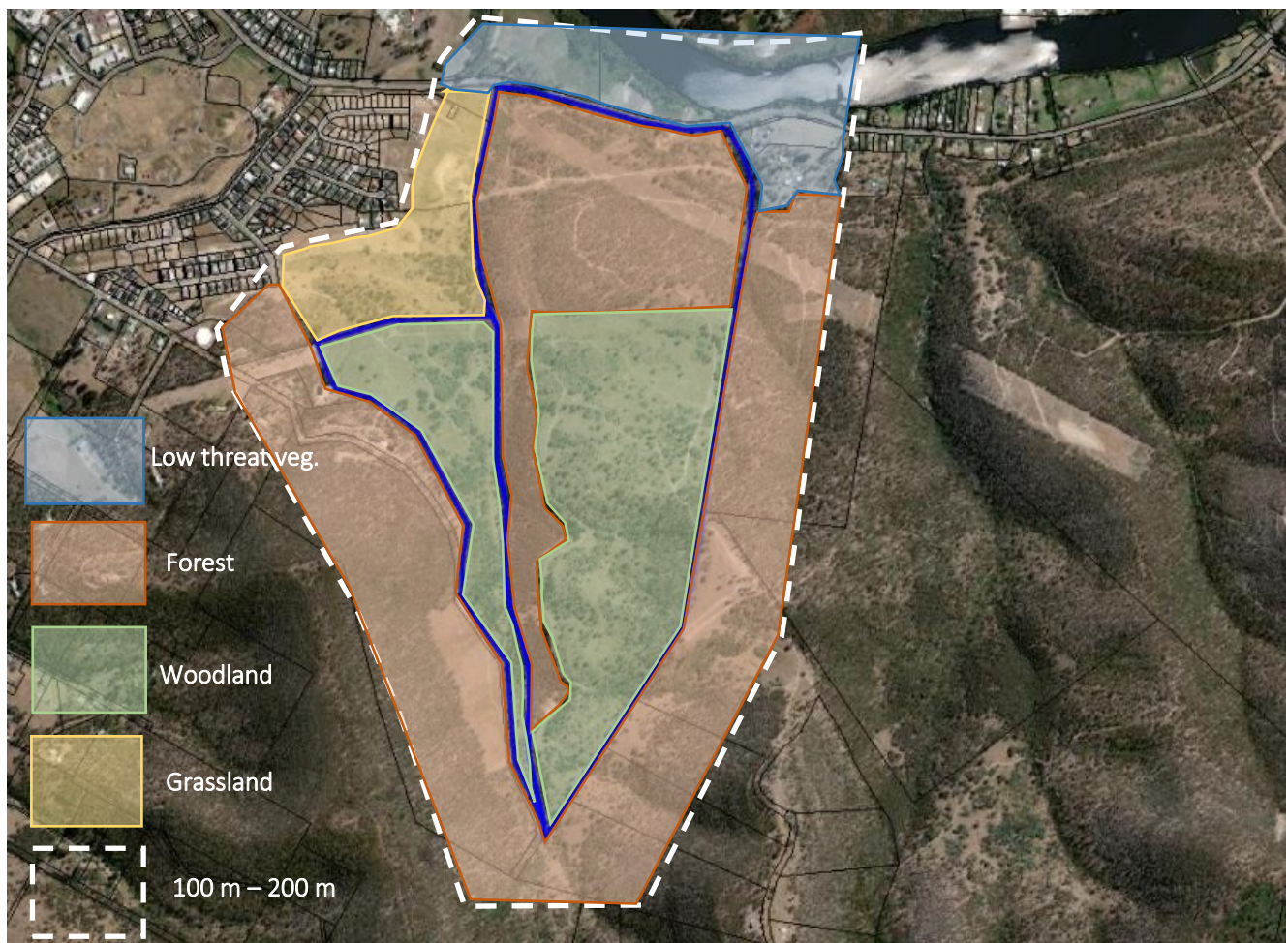
‘Effective Slope’ refers to the slope of land underneath bushfire-prone vegetation relative to the subject site. Effective Slope affects a fire’s rate of spread and flame length and is accordingly a critical aspect affecting bushfire behavior. AS 3959-2018 refers to five categories of Effective Slope (refer Table 2). The effective slope should be measured over 100m – 150m under the areas of bushfire-prone vegetation.



The site has various gradients, with the steepest parts of the site being the edges of the waterway (to the point of being cliff like); in general, though, the site is steepest on the east-west axis (see Figure 3).



*Figure 3: Direction and gradient of slope (site shown in blue outline) (source: LISTmap 4 June 2021)*



**Figure 4: Vegetation type on and within proximity to the site in accordance with AS 3959-2018 (site shown in blue outline) (source: LISTmap 19 May 2020)**

The site and surrounds contain the following vegetation types.

#### Low Threat Vegetation (LTV)

Developed residential land with maintained lawn and established gardens, the Lyell Highway, the River Derwent and so forth are considered low threat in accordance with Clause 2.2.3.2 of AS3959-2018, that is, they do not represent a bushfire threat. This is land primarily to the north and northwest in the lower sections of the site.

As each stage is developed, the lots (assuming smaller than 1,500 m<sup>2</sup>) will generally evolve into residential land with maintained lawns and gardens and therefore, will eventually fall within the category of Low Threat Vegetation.

#### Grassland Vegetation (G)

Within the site boundaries and adjoining the established residential area to the northwest is an area of unmanaged grassland. This area of vegetation is classified as 'Group G – Grassland' in accordance with AS 3959:2018 (see Figure 4). It is recognised that this land will most likely be developed as part of the first stages of the subdivision. It is therefore likely that this area will become LTV, noting that adequate hazard management areas will need to be established and maintained from the adjoining bushfire prone vegetation of Woodland and Forest.

#### Woodland Vegetation (W)

In accordance with AS 3959:2018, land in the upper slopes of the site is characterised with the vegetation type 'Group B – Woodland' noting that these sections of woodland are separated by the vegetation type 'Group A – Forest' (see Figure 4).



## Forest Vegetation (F)

In accordance with AS 3959:2018, the dominant vegetation type both on and surrounding the site is classified as 'Group A – Forest' (see Figure 4).

## 5. Bushfire Protection Measures

A range of bushfire protection measures will be required to improve resilience of the proposed development during a bushfire event, achieve a tolerable level of residual risk to occupants and to comply with the requirements of the planning scheme. The specific protection measures are outlined in this section.

### 5.1 Hazard Management Areas

The Hazard Management Area (HMA) refers to land that is managed in a minimum fuel condition to reduce the potential exposure of habitable buildings and occupants to radiant heat and flames and to provide defensible space around the building. The effectiveness of hazard management areas is reliant on ongoing maintenance by landowners. Hazard management areas must be appropriate to the risk posed to lots at any stage of a staged subdivision and as such, interim hazard management areas may be necessary until the development is completed.

For new subdivisions, the Bushfire-Prone Areas Code requires that each lot is provided with a building area and corresponding hazard management area that provides sufficient separation between bushfire-prone vegetation to achieve BAL 19 construction in accordance with Table 2.6 of AS 3959:2018.

The requirements relating to the maintenance of HMA's are listed under Table 1 with the separation distances required for a BAL 19 identified in Table 2.

**Table 1 Hazard Management Area Prescriptions**

Hazard Management Area Prescriptions	
<b>Within 10m of habitable buildings</b>	<ul style="list-style-type: none"><li>• No storage of flammable materials (e.g. firewood);</li><li>• Avoid locating flammable garden materials near vulnerable building elements such as glazed windows/doors, decks and eaves (e.g. non-fire-retardant plants and combustible mulches);</li><li>• Non-flammable features such as paths, driveways and paved areas are encouraged around habitable buildings.</li></ul>
<b>Trees within HMA</b>	<ul style="list-style-type: none"><li>• Maintain canopy separation of approximately 2.0m;</li><li>• Ensure no branches overhang habitable buildings;</li><li>• Remove tree branches within 2.0m of ground level below;</li><li>• Locate any new tree plantings 1.5 x their mature height from house;</li><li>• Avoid planting trees with loose, stringy or ribbon bark.</li></ul>
<b>Understory vegetation within HMA</b>	<ul style="list-style-type: none"><li>• Maintain grass cover at &lt;100mm;</li><li>• Maintain shrubs to &lt;2.0m height;</li><li>• Shrubs to be maintained in clumps so as to not form contiguous vegetation (i.e. clumps up to 10sqm in area, separated from each other by at least 10m);</li><li>• Avoid locating shrubs directly underneath trees;</li><li>• Periodically remove dead leaves, bark and branches from underneath trees and around habitable buildings.</li></ul>

**Table 2 Required separation distances between building area and vegetation class (BAL 19)**

Required separation distances between building area and vegetation class to achieve BAL-19		
<b>Grassland</b>	All upslope and flat land	10-<14 m
	Downslope >0 to 5 degrees	11-<16 m
	Downslope >5 to 10 degrees	13-<19 m
	Downslope >10 to 15 degrees	15-<22m
	Downslope >15 to 20 degrees	17-<25m
<b>Woodland</b>	All upslope and flat land	15-<22 m
	Downslope >0 to 5 degrees	18-<26 m
	Downslope >5 to 10 degrees	23-<32 m
	Downslope >10 to 15 degrees	28-<40 m
	Downslope >15 to 20 degree	36-<48 m
<b>Forest</b>	All upslope and flat land	23-<32 m
	Downslope >0 to 5 degrees	27-<38 m
	Downslope >5 to 10 degrees	34-<46 m
	Downslope >10 to 15 degrees	41-<56 m
	Downslope >15 to 20 degrees	51-<67 m

Provided that land outside of the individual proposed lots will be managed in accordance with the requirements of Table 1, combined with the perimeter fire trail, the master plan for the subdivision proposal will be able to satisfy the hazard management area requirements to achieve a BAL 19 construction in accordance with Table 2.6 of AS 3959:2018.

In terms of this managed area, it is understood that a Part V Agreement will be required to formalise responsibility for the ongoing management and maintenance of the land in accordance with any subsequent bushfire hazard management plan. To that end the Part V Agreement is to ensure that there is a clear path of liability of which Council or Tas Fire Service can pursue if the required management of land is not occurring.

## 5.2 Access

Subdivisions must be designed to facilitate safe and efficient access and egress for road users during an emergency. Firefighter intervention requires access to water supplies, bushfire-prone vegetation and to properties. Residents and emergency personnel also require safe and multiple evacuation routes. As well as conforming to appropriate engineering standards, the access network should provide for connectivity, multiple evacuation routes and perimeter access.

Apart from crossovers from the road, the subdivider will usually not be required to construct private accesses as part of a subdivision development. Private accesses are normally constructed as part of subsequent building work. However, the subdivision design must ensure that future buildings on the proposed lots can be provided with an access that will conform to the minimum standards provided in the Bushfire-Prone Areas Code.

The proposed master plan identifies two evacuation routes for residents with a perimeter fire trail that facilitates additional evacuation routes for fire fighters. The perimeter fire trail along the urban interface can greatly assist the ability of firefighters to protect properties.

There are specific prescriptions in relation to the layout of roads, fires trails and the location of property access to building areas as detailed in Table 3, Table 4 and Table 5 below. Any future subdivision application will need to ensure these requirements are satisfied.

**Table 3 Standards for road**

Element		Requirement
A.	Roads	<p>Unless the development standards in the zone require a higher standard, the following apply:</p> <ul style="list-style-type: none"> <li>a) two-wheel drive, all-weather construction;</li> <li>b) load capacity of at least 20t, including for bridges and culverts;</li> <li>c) (c) minimum carriageway width is 7m for a through road, or 5.5m for a dead-end or cul-de-sac road;</li> <li>d) minimum vertical clearance of 4m;</li> <li>e) minimum horizontal clearance of 2m from the edge of the carriageway;</li> <li>f) cross falls of less than 3 degrees (1:20 or 5%);</li> <li>g) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads;</li> <li>h) curves have a minimum inner radius of 10m;</li> <li>i) dead-end or cul-de-sac roads are not more than 200m in length unless the carriageway is 7m in width;</li> <li>j) dead-end or cul-de-sac roads have a turning circle with a minimum 12m outer radius; and</li> <li>k) carriageways less than 7m wide have 'No Parking' zones on one side, indicated by a road sign that complies with Australian Standard AS1743-2001 Road signs-Specifications.</li> </ul>



**Table 4 Standards for property access**

Element		Requirement
A.	Property access length is less than 30m; or access is not required for a fire appliance to access a firefighting water point.	There are no specified design and construction requirements.
B.	Property access length is 30m or greater; or access is required for a fire appliance to a fire fighting water point.	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> <li>a) all-weather construction;</li> <li>b) load capacity of at least 20t, including for bridges and culverts;</li> <li>c) minimum carriageway width of 4m;</li> <li>d) minimum vertical clearance of 4m;</li> <li>e) minimum horizontal clearance of 0.5m from the edge of the carriageway;</li> <li>f) cross falls of less than 3 degrees (1:20 or 5%);</li> <li>g) dips less than 7 degrees (1:8 or 12.5%) entry and exit angle;</li> <li>h) curves with a minimum inner radius of 10m;</li> <li>i) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads; and</li> <li>j) terminate with a turning area for fire appliances provided by one of the following: <ul style="list-style-type: none"> <li>i) a turning circle with a minimum outer radius of 10m; or</li> <li>ii) a property access encircling the building; or</li> <li>iii) a hammerhead 'T' or 'Y' turning head 4m wide and 8m long.</li> </ul> </li> </ul>
C.	Property access is 200 m or greater.	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> <li>(a) the requirements for B above; and</li> <li>(b) passing bays of 2m additional carriageway width and 20m length provided every 200m.</li> </ul>
D.	Property access length is greater than 30 m, and access is provided to 3 or more properties.	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> <li>(a) complies with requirements for B above; and</li> <li>(b) passing bays of 2m additional carriageway width and 20m length must be provided every 100m.</li> </ul>

**Table 5 Standards for fire trails**

Element		Requirement
A.	All fire trails	<p>The following design and construction requirements apply:</p> <ul style="list-style-type: none"> <li>a) all-weather, 4-wheel drive construction;</li> <li>b) load capacity of at least 20t, including for bridges and culverts;</li> <li>c) minimum carriageway width of 4m;</li> <li>d) minimum vertical clearance of 4m;</li> <li>e) minimum horizontal clearance of 2m from the edge of the carriageway;</li> <li>f) cross falls of less than 3 degrees (1:20 or 5%);</li> <li>g) dips less than 7 degrees (1:8 or 12.5%) entry and exit angle;</li> <li>h) curves with a minimum inner radius of 10m;</li> <li>i) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed fire trails, and 10 degrees (1:5.5 or 18%) for unsealed fire trails;</li> <li>j) gates if installed at fire trail entry, have a minimum width of 3.6m, and if locked, keys are provided to TFS; and</li> <li>k) terminate with a turning area for fire appliances provided by one of the following: <ul style="list-style-type: none"> <li>i) a turning circle with a minimum outer radius of 10m; and</li> <li>ii) a hammerhead 'T' or 'Y' turning head 4m wide and 8m long.</li> </ul> </li> </ul>
B.	Fire trail length is 200 m or greater	<p>The following design and construction requirements apply:</p> <ul style="list-style-type: none"> <li>a) the requirements for A above; and</li> <li>b) passing bays of 2m additional carriageway width and 20m length provided every 200m.</li> </ul>

### 5.3 Water

The subdivision must be provided with a water supply for firefighting purposes that is adequate, accessible, and reliable to allow for the protection of life and property associated with the subsequent use and development in a bushfire-prone area. There are specific requirements for static water supplies and reticulated water supplies.

The subdivider will generally not be responsible for the installation of static water supplies to households. Provision of these supplies will normally be a requirement for individual landowners and residents and will most likely be met through installation of tanks which capture rainwater. Generally, where reticulated water is specified, developers will be required to meet these requirements, that is fire hydrants will be prescribed in the first instance and must be within 120 m of the furthest part of a building area (as a hose lay).

Subdividers will also be required to ensure that all lots within the subdivision can meet the requirements for access to building areas where static water supplies might be located. Factors including the steepness of the block will need to be considered as will distance requirements for fire hydrants.

Specifications for both static and reticulated water supply are detailed in Table 6 and Table 7. Any future subdivision application will need to ensure these requirements are satisfied.

**Table 6 Fire hydrant water supply specifications**

Element		Requirement
A.	Distance between building area to be protected and water supply	<p>The following requirements apply:</p> <ul style="list-style-type: none"> <li>a) The building area to be protected must be located within 120 metres of a fire hydrant; and</li> <li>b) The distance must be measured as a hose lay, between the water connection point and the furthest part of the building area.</li> </ul>
B.	Design criteria for fire hydrants	<p>The following requirements apply:</p> <ul style="list-style-type: none"> <li>a) fire hydrant system must be designed and constructed in accordance with <i>TasWater Supplement to Water Supply Code of Australia WSA 03 – 2011-3.1 MRWA 2<sup>nd</sup> Edition</i>; and</li> <li>b) fire hydrants are not installed in parking areas.</li> </ul>
C.	Hardstand	<p>A hardstand area for fire appliances must:</p> <ul style="list-style-type: none"> <li>a) No more than three metres from the hydrant, measured as a hose lay;</li> <li>b) No closer than six metres from the building area to be protected;</li> <li>c) A minimum width of 3m constructed to the same standard as the carriageway; and</li> <li>d) Connected to the property access by a carriageway equivalent to the standard of the property access.</li> </ul>

**Table 7 Static water supply (firefighting) specifications**

Element		Requirement
A.	Distance between building area to be protected and water supply.	<p>The following requirements apply:</p> <ul style="list-style-type: none"> <li>a) the building area to be protected must be located within 90m of the fire fighting water point of a static water supply; and</li> <li>b) the distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area.</li> </ul>
B.	Static Water Supplies	<p>A static water supply:</p> <ul style="list-style-type: none"> <li>a) may have a remotely located offtake connected to the static water supply;</li> <li>b) may be a supply for combined use (fire fighting and other uses) but the specified minimum quantity of fire fighting water must be available at all times;</li> <li>c) must be a minimum of 10,000L per building area to be protected. This volume of water must not be used for any other purpose including fire fighting sprinkler or spray systems;</li> <li>d) must be metal, concrete or lagged by non-combustible materials if above ground; and</li> <li>e) if a tank can be located so it is shielded in all directions in compliance with section 3.5 of Australian Standard AS 3959-2009 Construction of buildings in bushfire-prone areas, the tank may be constructed of any material provided that the lowest 400mm of the tank exterior is protected by: <ul style="list-style-type: none"> <li>i) metal;</li> </ul> </li> </ul>



Element		Requirement
		<ul style="list-style-type: none"> <li>ii) non-combustible material; or</li> <li>iii) fibre-cement a minimum of 6mm thickness.</li> </ul>
C.	Fittings, pipework and accessories (including stands and tank supports)	<p>Fittings and pipework associated with a fire fighting water point for a static water supply must:</p> <ul style="list-style-type: none"> <li>a) have a minimum nominal internal diameter of 50mm;</li> <li>b) be fitted with a valve with a minimum nominal internal diameter of 50mm;</li> <li>c) be metal or lagged by non-combustible materials if above ground;</li> <li>d) if buried, have a minimum depth of 300mm [S1];</li> <li>e) provide a DIN or NEN standard forged Storz 65mm coupling fitted with a suction washer for connection to fire fighting equipment;</li> <li>f) ensure the coupling is accessible and available for connection at all times;</li> <li>g) ensure the coupling is fitted with a blank cap and securing chain (minimum 220mm length);</li> <li>h) ensure underground tanks have either an opening at the top of not less than 250mm diameter or a coupling compliant with this Table; and</li> <li>i) if a remote offtake is installed, ensure the offtake is in a position that is: <ul style="list-style-type: none"> <li>i) visible;</li> <li>ii) accessible to allow connection by fire fighting equipment;</li> </ul> </li> </ul> <p>at a working height of 450 – 600mm above ground level; and</p> <ul style="list-style-type: none"> <li>iii) protected from possible damage, including damage by vehicles.</li> </ul>
D.	Signage for static water connections.	<p>The fire fighting water point for a static water supply must be identified by a sign permanently fixed to the exterior of the assembly in a visible location. The sign must:</p> <ul style="list-style-type: none"> <li>a) comply with water tank signage requirements within Australian Standard AS 2304-2011 Water storage tanks for fire protection systems; or</li> <li>b) comply with the Tasmania Fire Service Water Supply Guideline published by the Tasmania Fire Service.</li> </ul>
E.	Hardstand	<p>A hardstand area for fire appliances must be:</p> <ul style="list-style-type: none"> <li>a) no more than 3m from the fire fighting water point, measured as a hose lay (including the minimum water level in dams, swimming pools and the like);</li> <li>b) no closer than 6m from the building area to be protected;</li> <li>c) a minimum width of 3m constructed to the same standard as the carriageway; and</li> <li>d) connected to the property access by a carriageway equivalent to the standard of the property access.</li> </ul>

## 6. Recommendations

The concept masterplan is consistent with the Tasmania Fire Service guidelines: *Building for Bushfire – subdivision*.

Importantly, the overall subdivision design, based on the masterplan, can meet the minimum requirements of the Bushfire Prone Areas Code.

It is recommended that the following key points are broadly integrated and addressed:

- The sequence of the staging is critical to the bushfire management requirements and interim hazard management areas will be required.
- All hazard management areas are contained within the subject site, noting that the area marked as '*bushfire hazard management zone*' on the master plan is to be subject to a Part V Agreement to formalise responsibility for the ongoing management and maintenance of the land in accordance with any subsequent bushfire hazard management plan.
- The managed recreation area is incorporated into the overall subdivision design which will reduce risk to life and property, whilst having other advantages from a development perspective. For example, increasing flexibility for building siting and reducing building construction costs for future landowners.
- The road network should provide for connectivity, multiple evacuation routes and perimeter access.
- Subdivision design should incorporate fire hydrants located to achieve 120 m coverage of building areas on each lot if within a reticulated water supply area.



**CLEARED BUSHFIRE PROTECTION ZONE**  
CLEARED FIRE TRAIL TO BOUNDARY ADJACENT  
TO IDENTIFIED FIRE SOURCE (FOREST)  
51-67m DOWNHILL SLOPE 15-22deg

**BUSHFIRE HAZARD MANAGEMENT ZONE**  
BUSHFIRE MANAGEMENT PLAN INCLUDING SELECTED  
TREE CLEARING, REMOVAL OF DEADWOOD AND  
UNDERGROWTH

**CLEARED BUSHFIRE PROTECTION ZONE**  
CLEARED FIRE TRAIL TO BOUNDARY ADJACENT  
TO IDENTIFIED FIRE SOURCE (FOREST)  
23-32m WIDE (UPHILL OR FLAT LAND)

LEGAL ROAD TO BOUNDARY

**CLEARED BUSHFIRE PROTECTION ZONE**  
CLEARED FIRE TRAIL TO BOUNDARY ADJACENT  
TO IDENTIFIED FIRE SOURCE (FOREST)  
23-32m WIDE (UPHILL OR FLAT LAND)

## BUSHFIRE MANAGEMENT

**NOTE:**  
REFER TO ERA BUSHFIRE MANAGEMENT REPORT

FIRE TRAILS TO BE PROVIDED IN ACCORDANCE  
WITH ERA BUSHFIRE REPORT.

WATER SUPPLY WILL BE PROVIDED TO ENSURE  
ADEQUATE FLOW AND PRESSURE FOR FIRE  
HYDRANTS AS OUTLINED IN ERA  
BUSHFIREMANAGEMENT REPORT

MANAGED LANDSCAPE AREA UNDER PART V  
AGREEMENT

FIRE BREAK AND TRACK

WETLAND STORMWATER DETENTION

OVERLAND FLOWPATHS

CULTURAL HERITAGE SITES



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PROJECT NAME  
The Mills New Norfolk

DRAWING  
BUSHFIRE MANAGEMENT

DATE:  
4/06/2021

SCALE:

PROJECT NO:  
2001

DRAWING NO.  
SK R 05

ISSUE  
H

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