

BUSHFIRE MANAGEMENT PLAN



STAGES 8 & 10 – EVERLEIGH, TEVIOT ROAD, GREENBANK

PREPARED FOR MIRVAC

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2022/1277

Date: 11 November 2022



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Document Control

RFA21-066

QUALITY ASSURANCE STATEMENT				
Revision No.	Author	Status	Approved for Issue	
			Name	Date
01	Amelia Spring	Draft	Rob Friend, Director, Rob Friend & Associates Pty Ltd	23 December 2021
02	Rob Friend	Draft	Rob Friend, Director, Rob Friend & Associates Pty Ltd	14 February 2022
03	Rob Friend	FINAL	Rob Friend, Director, Rob Friend & Associates Pty Ltd	26 February 2022
04	Rob Friend	Final amended	Rob Friend, Director, Rob Friend & Associates Pty Ltd	31 May 2022

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Cover Photo: View of Fire trail B along the northern side of the High voltage powerline easement.



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1 INTRODUCTION

Rob Friend and Associates have been engaged by Mirvac Qld (the applicant) to provide a Bushfire Management Plan for Stages 8 and 10 (the site) of their Everleigh development site. The two Stages are located at 138-140 Teviot Road, Greenbank and is currently described as Lot 9003 on SP324819 and Lot 9004 on SP327213 (in the State mapping).

The original bushfire management plan of 2017 placed the two stages in a Fire Management Unit, however the Mirvac is required to update this to reflect current and ongoing stages of the development.

The State Planning Policy (SPP) Natural Hazards, Risk and Resilience bushfire hazard mapping identifies areas of medium potential bushfire intensity and potential impact buffer over vegetation within and surrounding the site. Some of this vegetation will be removed as a natural consequence of an approved development which is part of the Everleigh development footprint. The Logan Planning Scheme 2015 V8.0 Bushfire hazard overlay maps reflect the SPP bushfire hazard mapping.

The site is predominantly vegetated with a maintained powerline easement along its northern boundary. The site's development footprint is within 100 metres of areas of hazardous vegetation, however some of this vegetation is the subject of clearing for other stages of the applicant's current development.

The areas to the south have been cleared of vegetation as have the lots which form part of the Approved development. Furthermore, according to the Everleigh Masterplan areas adjoining the site to the east, west and south will be or are undergoing clearing for precincts 8, 9 and 11.

A site inspection was undertaken on the 18 November 2021 to collect the site-based data to inform this advice.

2 PROPOSAL

The land is held in freehold by Mirvac Queensland.

The proposal is for a residential development within Stages 8 and 10 of Everleigh, Greenbank (see Figure 3). The development will be located off Teviot Road, Greenbank.

The two stages will be primarily accessed via a new main roadway from Teviot Road with access also via internal residential roadways within Stage 9 when constructed.

Stage 8 includes the existing high voltage powerline easement, as well as the vegetated lands to the immediate north of the High voltage powerline easement these are protected as part of an environmental reserve to be dedicated to Logan City Council with the remaining eastern boundary abutting the future Stage 6. Stage 10 abuts Stage 8 along its western boundary and along the southern boundary is an area which is currently under development as part of Stage 9.

Stage 10 will include a section of the high voltage powerline easement along its northern boundary. Stage 8 abuts the eastern boundary, with Stage 9 which is under development abutting the southern boundary. To the west is a future stage 11.

3 SITE DESCRIPTION

3.1 GENERAL DESCRIPTION

The site is located at 138-140 Teviot Road, Greenbank within a residential area; west of the Mount Lindesay Highway and to the east of the railway corridor connection to Greenbank Station. The subject site described as Stage 8 and 10 are located within a larger development area under the name Everleigh, Greenbank (Appendix I). Stage 8 and 10 are located along the northern boundary of the development. The development footprint falls within the Priority Development Area in accordance with the State Government.

The surrounding area is largely, Rural residential properties with areas of vegetation. To the South is cleared land forming residential lots of the greater development area, and areas that are currently vegetated that will be cleared as part of the approved development.

The northern boundary of the site is a cleared powerline easement managed by Energex.

To the immediate west and South of the site are currently vegetated areas which will undergo clearing for future precincts 11 and 78 (Appendix II).

3.2 LANDFORM

The site consists of low parallel ridges within a low wide drainage line that sits between the two low ridges. The ridge and the drainage line alignment are generally from west to east. Therefore the landform is relatively flat, with slope calculated from the drainage line to the south at 1.4 degrees.

3.3 VEGETATION

The State's mapping within Queensland Globe's Regulated Vegetation Overlay maps vegetation within the Site and adjacent to the site as Category B area containing of concern or endangered vegetation and is described as having the following Regional Ecosystems:

RE 12.9-10.2 - *Corymbia citriodora* subsp. *variegata* open forest or woodland usually with *Eucalyptus crebra*. Other species such as *Eucalyptus tereticornis*, *E. moluccana*, *E. acmenoides* and *E. siderophloia* may be present in scattered patches or in low densities. Understorey can be grassy or shrubby. Shrubby understorey of *Lophostemon confertus* (whipstick form) often present in northern parts of bioregion. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 10b).

RE 12.9-10.7 - *Eucalyptus crebra* +/- *E. tereticornis*, *Corymbia tessellaris*, *Angophora leiocarpa*, *E. melanophloia* woodland. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 13c).

The Regulated Vegetation Management Area mapping also maps category X or non-remnant vegetation within and around the Stage 10 area. This area contains regrowth vegetation with a similar understorey in species and structure to the remnant areas of 12.9-10.2/12.9-10.7, however it has been lock-in as category x regulated vegetation.

The Qld Fire and Emergency Service (QFES) Redi-portal maps the vegetation as the Vegetation Hazard Class 9.2 - Moist to dry eucalypt woodland on coastal lowlands and ranges. VHC 9.2 has been attributed with the total ground fuel of 14.9 t/ha and a total fuel load of 17.2t/ha.

4 BUSHFIRE HAZARD MAPPING

4.1 STATE

The State Planning Policy Natural Hazards, Risk and Resilience Bushfire Overlay maps polygons of Medium Potential Bushfire Hazard Intensity over a majority of the site and surrounding areas, with several smaller polygons of High potential fireline intensity maps over some of the area as well.

A 100-metre-wide potential impact buffer surrounds the medium and high potential fireline intensity.

It should be noted that a large portion of vegetation, currently mapped by the State as bushfire hazard, has been cleared for the development.

4.2 LOCAL

The Logan Planning Scheme Bushfire Hazard Overlay maps areas consistent with the State as medium potential bushfire hazard over a majority of the site and surrounding areas (Appendix III). Again, areas of vegetation that are currently cleared or are roads, are incorrectly mapped as potential bushfire hazard.

It is noted that the assessment manager for this ROL application is SARA and as such the Logan City Plan and Bushfire hazard Overlay Map is not assessable as part of this application due to the land being located within a Priority Development Area (PDA).

5 FINDINGS

Based on our site analysis which includes our site inspection and desktop analysis the following findings with respect to bushfire hazards and potential bushfire risk were made: -

1. The vegetation within the two Stages, Stage 8 and 10 will be cleared as a natural consequence of the development approval.
2. The local landform has slopes no greater than 5 degrees generally sloping from south to north.
3. The two stages will be serviced by a new main roadway linking Teviot Road to the future residential areas.
4. The high voltage powerline easement receives irregular maintenance and as such it provides a 60-metre-wide low hazard area abutting the northern boundaries of both Stages.
5. As the lands to the south has been mostly cleared of vegetation and is in the process of being developed this area is considered to be an area of low bushfire hazard.

6. During the development process, access around the two stages will be available along the existing fire trail system and through a locked gate at the end of Campbell Road.
7. With regard to Stage 8 where the residential development will abut an area of vegetation to be retained as an Environmental Reserve as approved in the Masterplan, a setback from that vegetation that is sufficient to achieve a Radiant heat flux of 29kW/m² or acceptable level of risk is to be established.
8. The setback necessary to achieve a Radiant heat flux of 29kW/m² is provided in Table 1 below. The setback has been calculated using Flamesol minimum distance calculator with the required State values for the local FFDI and Fuel loads for the mapped Vegetation Hazard Class.

Table 1 – Radiant heat flux setbacks

Everleigh Environmental Reserve - Minimum Distance Calculator - AS3959-2018 (Method 2)
(Calculated February 14, 2022, 4:57 pm (MDc v.4.9))

Inputs		Outputs	
Fire Danger Index	55	Rate of spread	1.08 km/h
Vegetation classification	Woodland	Flame length	9.1 m
Understorey fuel load	14.9 t/ha	Flame angle	54.4 °, 65.4 °, 73.4 °, 78.4 °, 80.4 ° & 85.4 °
Total fuel load	17.2 t/ha	Elevation of receiver	3.51 m, 3.88 m, 3.98 m, 3.91 m, 3.83 m & 2.79 m
Vegetation height	n/a	Fire intensity	9,625 kW/m
Effective slope	1.4 °	Transmissivity	0.883, 0.869, 0.849, 0.827, 0.814 & 0.744
Site slope	1.4 °	Viewfactor	0.5917, 0.4368, 0.2929, 0.1984, 0.1608 & 0.0441
Flame width	100 m	Minimum distance to < 40 kW/m ²	7.5 m
Windspeed	n/a	Minimum distance to < 29 kW/m²	10.2 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m ²	15.2 m
Flame temperature	1,090 K	Minimum distance to < 12.5 kW/m ²	22.2 m
		Minimum distance to < 10 kW/m ²	26.9 m

Rate of Spread - McArthur, 1973 & Noble et al., 1980

Flame length - NSW Rural Fire Service, 2001 & Noble et al., 1980

Elevation of receiver - Douglas & Tan, 2005

Flame angle - Douglas & Tan, 2005

Radiant heat flux - Drysdale, 1999, Sullivan et al., 2003, Douglas & Tan, 2005

6 BUSHFIRE MANAGEMENT PLAN

The following provides a range of specifications which are proposed to manage and mitigate the potential impact of a fire on life and property within and around Stages 8 and 10 of Everleigh.

6.1 EXISTING FIRE MANAGEMENT INFRASTRUCTURE

1. There are several existing tracks and fire management infrastructure within the property which are to be maintained to maintain effective access to the Stage perimeter and to other areas of bushfire which will be retained around the Stage (see Appendix IV). Table 1 provides a summary of the management requirements.
2. All of the existing trails/firebreaks require some maintenance to ensure that they are suitable for fire management activities.
3. All fire trails should be maintained at a width of 6 metres wide with no grass or grass maintained at a height of less than 100 mm.
4. It is not essential that the fuels within this lot be reduced by a controlled burn due to its location within the site and its proximity to areas of bushland which will be retained as part of the master plan. However, if no development proceeds in this site for the first 5 years (i.e. 2020) then in the year 6 a control burn should occur (2021).
5. A new fire management trail is to be located within the 100-metre-wide bushfire buffer around P10 to provide access for Emergency Services and to link to Fire trail B and E as well as the internal roadways constructed as part of P9.

Table 2 - Recommended management of existing trails and firebreaks on Site

Fire Trail	Location	Status	Management
A	North-western corner of the property	Eroded in places	Fill and levelling
B	Traverses the northern side of the Powerline easement	Eroded in places	Fix side drainage and fill and level eroded areas
C	Trail on northern boundary of the land between two gates	In satisfactory condition	Maintain in existing condition
D	Trail from centre of northern boundary to E & F	Good	Maintain
E	Old fire trail, is in disrepair and is to be reinstated to link to the 100-metre-wide bushfire buffer around P10	Very poor	Reinstate and regraded
G	Fire trail along the eastern boundary	good	Requires some minor maintenance. Bridge crossing suitable

6.2 ROADWAYS & ACCESS

1. All internal roadways are to comply with the QFES Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots (QFES 2015).

2. Access to fire trails not being removed as part of the development of Stages 8 and 10 are to be maintained as is the vehicle linkage with Campbell Road.
3. Access from the Teviot road boundary via the area identified P13 (Neighbourhood Centre) and P11 is to be maintained in a trafficable condition until those two future stages are developed.
4. All other existing fire trails within the proposed Environmental Area and future development precincts are to be maintained in accordance with the whole of Site Bushfire Management Plan (Rob Friend & Associates Pty Ltd, dated 1 September 2018).

6.3 WATER

1. All fire hydrant standpipes are to comply with the QFES Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots (QFES 2015).

6.4 LANDSCAPE PLANTINGS LINEAR AND NEIGHBOURHOOD PARKLANDS

1. All landscaping for the linear and neighbourhood parklands within Stages 8 and 9 as per Appendix K – Landscape Drawings (Form 17/02/2022) is to ensure that there are no contiguous plantings adjacent to any existing bushfire with an area of greater than 1 hectare or a vegetated linear corridor of greater than 100 metres.
2. Where there are connects, a buffer area no less than 20 metres is to be designed as a grassed maintained area.

6.5 BUSHFIRE BUFFER

1. Where the adjacent land is proposed for development as part of the approved Masterplan a 100-metre-wide bushfire buffer it to be cleared from the rear of all residential lots around the perimeter of P10.
2. Where Stage 8 abuts the proposed conservation area as identified in the Master Plan a separation of no less than 10.2 metres is required to achieve an acceptable level of risk for those lots fronting or backing onto the environmental reserve.
3. The clearing is to involve the removal of all woody vegetation with the retention of grasses to limit erosion and degradation of the buffer area.
4. The grassy buffer is to be slashed regularly prior to the potential bushfire season August to February and particularly after extended periods of rainfall.

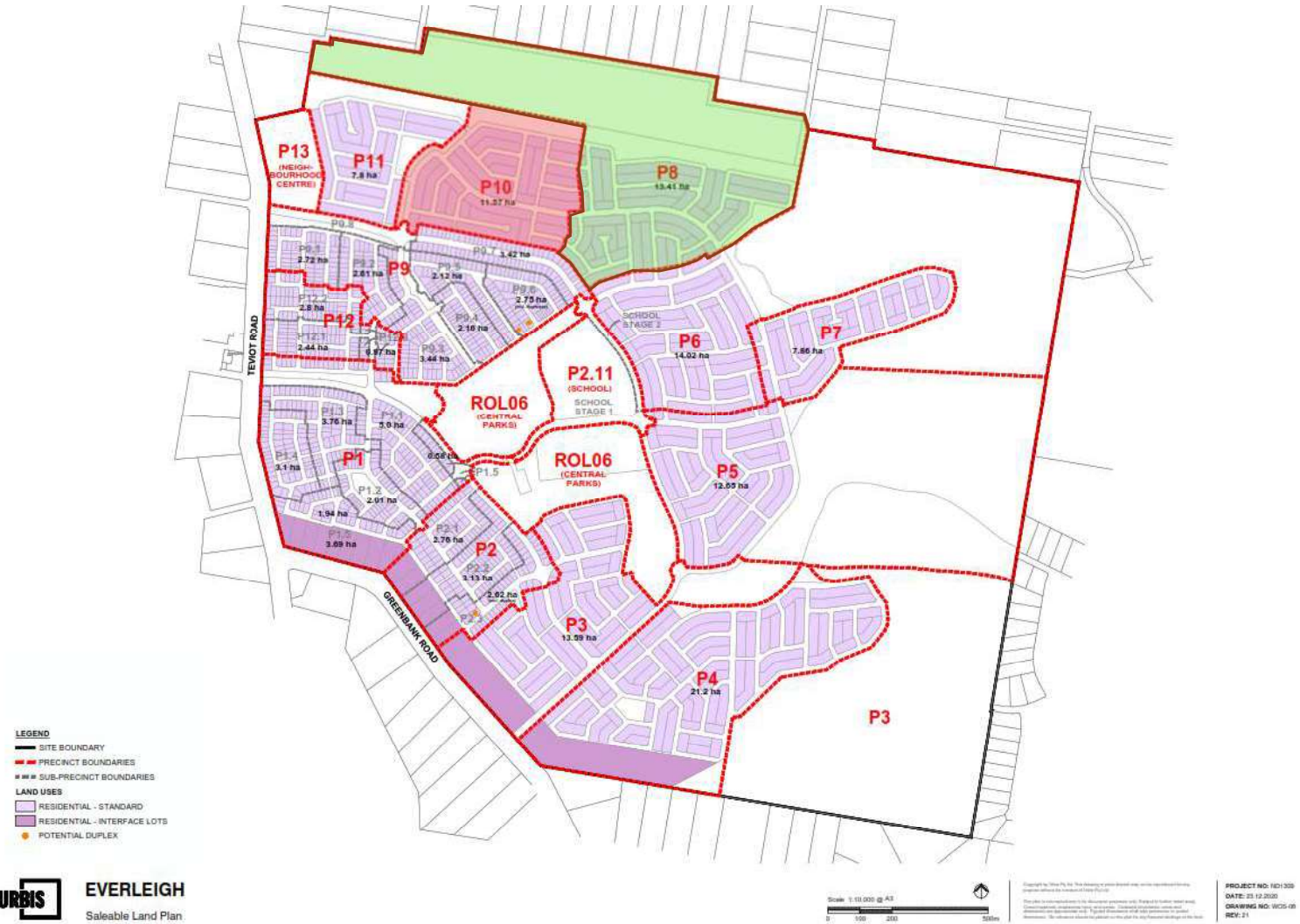
6.6 CONTROLLED BURNS

1. Weather permitting, a controlled burn is to be undertaken of any residual vegetation within the area covered by Stages P11 and P6.
2. All other areas are to be burnt in accordance with the existing approved Whole of property Bushfire Management Plan.

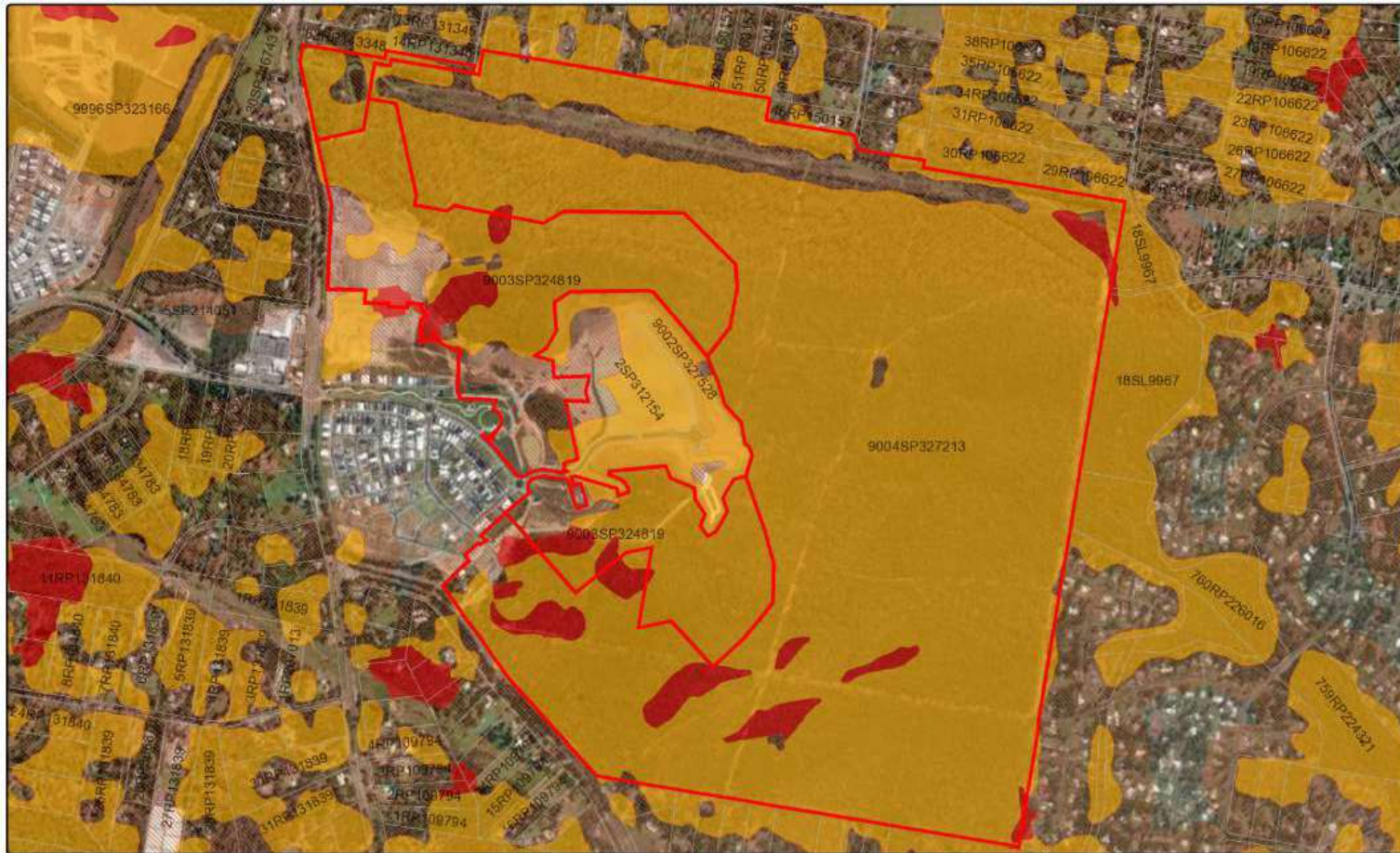
7 APPENDIX I – FIRE TRAILS



8 APPENDIX II - DEVELOPMENT PLAN



9 APPENDIX III - MAPPING



Legend

Drawn Polygon Layer

- Override 1

Cadastre (25k)

- Cadastre (25k)

Bushfire prone area

- Very High Potential Bushfire Intensity
- High Potential Bushfire Intensity
- Medium Potential Bushfire Intensity
- Potential Impact Buffer



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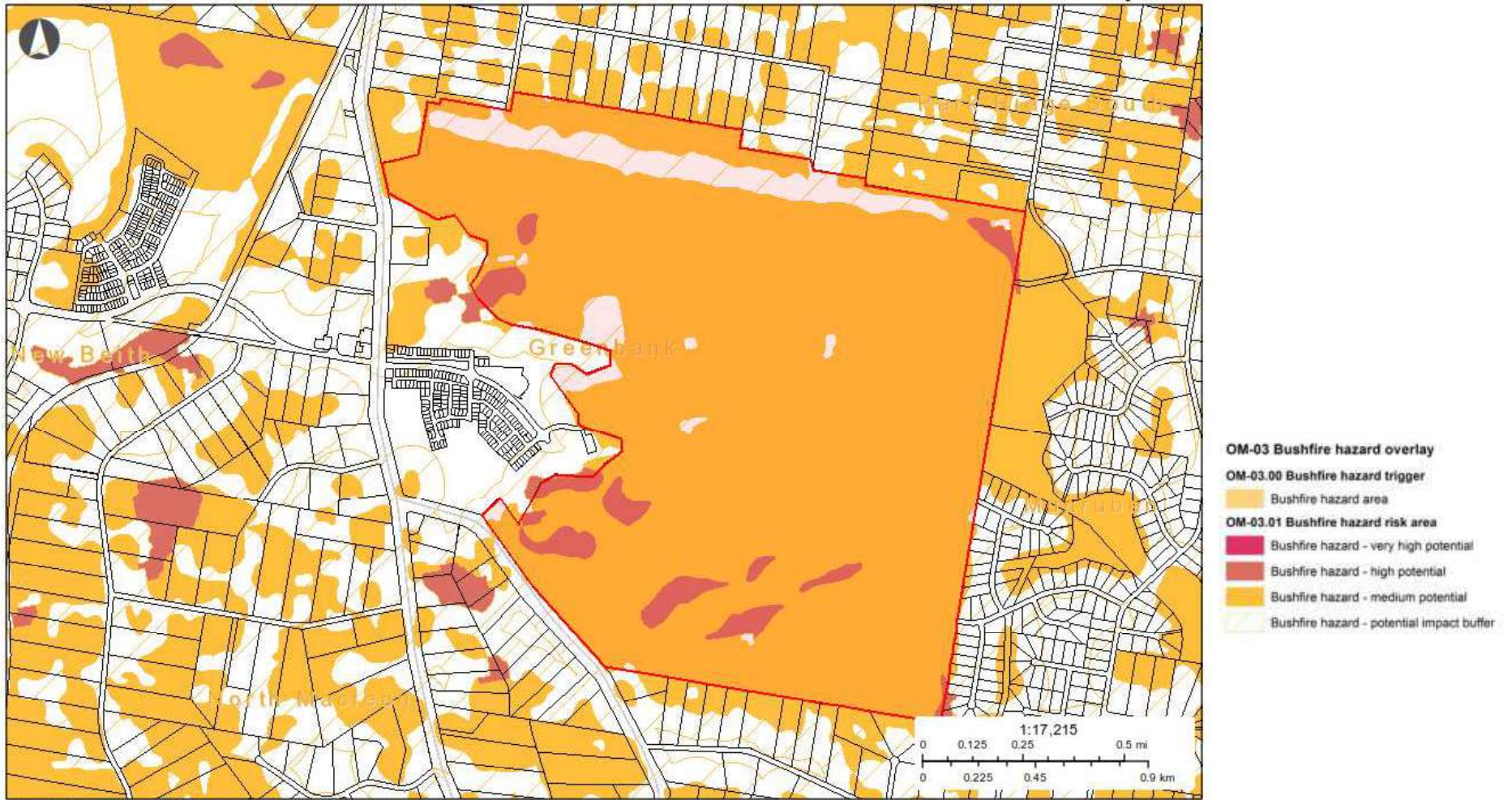


State Planning Policy
Making or amending a local planning instrument
and designating land for community infrastructure

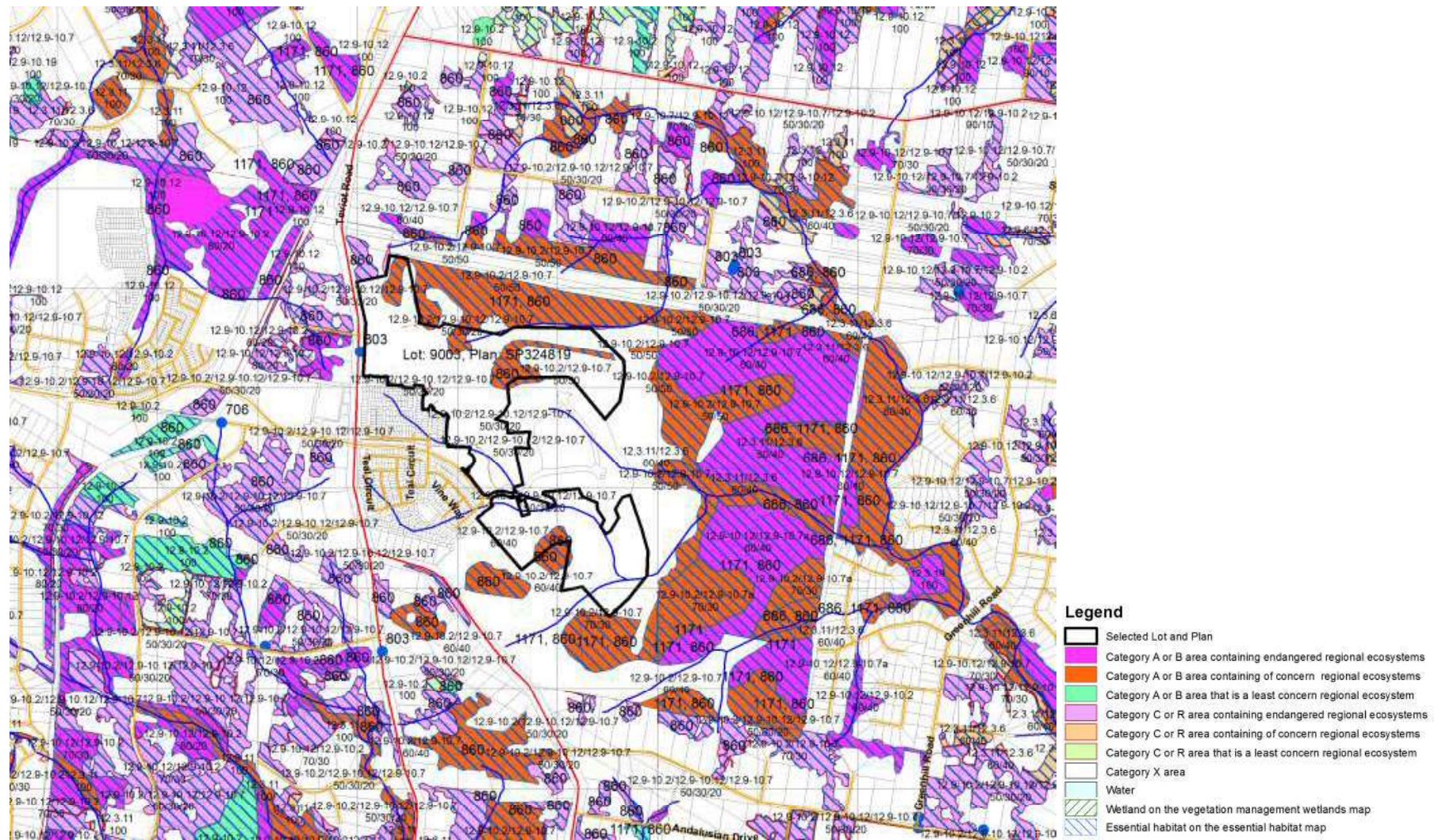
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0 290 580 870 1,160
Metres



Regulated Vegetation Management Area Map



10 PHOTOGRAPHIC PLATES



Photographic Plate 1: Powerline easement on northern boundary



Photographic Plate 2: Fallen tree require clearing



Photographic Plate 3: Erosion of trails.



Photographic Plate 4: