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# Travers

bushfire & ecology

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## bushfire protection assessment

Rezoning Application  
Lot 1 DP 1139826  
Ralston Avenue  
Belrose

April 2017  
(REF: A17029B)



## Bushfire Protection Assessment

Rezoning Application  
Lot 1 DP 1139826  
Ralston Avenue, Belrose

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The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

# Executive Summary

*Travers bushfire & ecology* has been engaged to undertake a revised bushfire assessment (second revision) for the planning proposal located off Ralston Avenue, Belrose within Lot 1 DP 1139826.

The development area, perimeter road and creation of a 'pocket park' have been informed as a direct result of the bushfire and ecological requirements. This second revision of the report has been prepared following consultation with the NSW Rural Fire Service to address issues including the feasibility and ongoing management of the asset protection zones (refer to Foreword).

Previous bushfire & ecological studies were undertaken over 135.3 ha of lands owned by *Metropolitan Local Aboriginal Land Council (MLALC)* and 0.86 ha of land comprising public roads which are proposed to be closed. Following initial constraint assessments between 2008 and 2011 a development precinct was determined which focused on approximately 23.32ha of plateau lands.

The balance of the developable area of the site will comprise the public open space, stormwater management and asset protection zones (APZ) for bushfire protection. Each of these elements has been designed in an integrated manner to enable the recreational use of these spaces and to utilise the natural landscape as a defining element of the visual character and mitigate any potential impacts on water quality.

This report identifies matters for consideration for the planning proposal and highlights the required bushfire protection measures (including asset protection zones (APZs) for future development under the *Environmental Planning and Assessment Act 1979, Section 117 Direction 4.4* and in accordance *Planning for bush fire protection 2006 (PBP)* and *Community Resilience Practice Note 2/12 Planning Instruments and Policies*.

A bushfire protection assessment (second revision) has been undertaken for the proposed rezoning located at Lot 1 DP 1139826, Ralston Avenue, Belrose.

The key principle for the proposal is to ensure that future development is capable of complying with the *Section 117 Direction* and *PBP*.

Planning principles for the proposal include the provision of adequate access including perimeter roads, establishment of adequate APZs for future housing, allowing for minimum lot depths to accommodate APZs and the introduction of controls which avoid placing inappropriate developments (such as petrol stations) in hazardous areas and the inappropriate placement of combustible material in APZs.

Our assessment found that bushfire can potentially affect the site from the surrounding forest and heath vegetation communities resulting in possible ember attack, radiant heat and potentially flame attack, however these issues can be suitably addressed through the implementation of combined bushfire protection measures as outlined in this report

The past fire history of the surrounding landscape is such that considerable planning focus has been undertaken for traffic capability, asset protection, emergency management, fire trail construction, hazardous fuels management, building construction standards, water management and peripheral land management on land owned by the land owner. The

bushfire risk posed to the rezoning proposal however can be mitigated if a full suite of bushfire protection measures (including APZs) are implemented and managed in perpetuity.

Upon final design engagement with recommendations made within this report the future development of these lands in accordance with the attached bushfire protection plan (Schedule 1) will provide compliance with the planning principles of *Planning for bush fire protection 2006* and *Community Resilience Practice Note 2/12 – Planning Instruments and Policies* (refer Table 4.1)

In conclusion we can advise that;

- The R2 low density residential zoning is a suitable development class and is unremarkable in comparison to other similar topographical developments.
- The requirements established in *s.177 Direction 4.4 Planning for Bushfire Protection* and *Plan Sydney* have been satisfied.
- Safe evacuation can be provided through three evacuation routes leading through established residential areas and away from the hazard.
- APZs can be provided that exceed the minimum requirements of PBP 2006 and AS3959.
- The wider landscape beyond the APZ will be managed by Strategic Fire Advantage Zones.
- Adequate APZ's adjacent to power lines will be implemented to ensure access is not affected by unmanaged lands.
- The planning proposal will improve bushfire protection measures afforded to existing development through the removal of hazardous vegetation and improved access for firefighting suppression.
- Costs for the development and implementation of bushfire protection measures will be imposed on the landowner and the developer.
- There have been no additional burdens on emergency services demonstrated.
- Environmental constraints have been minimised

Therefore there can be no doubt that the Ralston Avenue planning proposal has been subjected to comprehensive bushfire assessment and fuel management planning initiatives. Coupled with the proposed community association management approach the planning proposal fulfils all the requirements of the Section 117 Direction, PBP, DCN 2/12 and AS3959 and we summarise those points in the table below.



**Table 4.1: Planning Principles**

Direction 4.4	Compliance statement
In the preparation of a planning proposal the relevant planning authority must consult with the Commissioner of the NSW Rural Fire Service	<b>Yes.</b> The NSW RFS has been consulted with correspondence from the RFS dated 25/2/2015, 26/6/2015, 9/7/2015 and most recently (undated) but received by this firm in November 2016.
A planning proposal must:	
(a) have regard to <i>Planning for Bushfire Protection 2006</i> ,	<b>Yes.</b> A bushfire protection assessment report and fuel management plan were prepared in 2015 along with addendum advice in November 2016 and again in 2017; and in full accord with <i>PBP</i> .
(b) introduce controls that avoid placing inappropriate developments in hazardous areas, and	<p><b>Yes.</b> The response to the NSW RFS on November 4 2016 advised of additional bushfire protection measures beyond those required in <i>PBP</i>. Those measures will form the development control measures and be provided within the Area Plan thus designing future residential development appropriate for the level of risk.</p> <p>Importantly the nature of the residential development is an appropriate use and the proposed hazard management controls are in accordance with, and often beyond, <i>PBP</i> to effectively address the level of hazard. Importantly though the concept of the site permitting “inappropriate development” such as schools or retirement villages can be eliminated via the Community Management Statement which manages the privately owned community title development.</p> <p>In the unlikely event that a future proposal could involve a private school or retirement village then that application would need to be considered by both Council and the RFS through the normal means. Given the nature of the private communal lands then the likelihood of a change is low. Notwithstanding the theory that it may occur any such an application would need to pass the Council and the RFS tests. Again that is highly unlikely given the effects of fire, often difficult to evacuate and more susceptible to smoke impacts.</p>
(c) ensure that bushfire hazard reduction is not prohibited within the APZ.	<b>Yes.</b> Significant environmental studies have been undertaken to ensure APZs have been excluded from environmentally significant land.
A planning proposal must, where development is proposed, comply with the following provisions, as appropriate:	
(a) provide an Asset Protection Zone (APZ) incorporating at a minimum: (i) an Inner Protection Area bounded by a	<b>Yes.</b> The APZs recommended exceed the minimum requirements outlined in <i>PBP</i> for subdivision development (i.e. Appendix 2 of

Direction 4.4	Compliance statement
<p>perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property, and  (ii) an Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road,</p>	<p><i>PBP</i>).</p>
<p>(c) contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks</p>	<p><b>Yes.</b></p>
<p>(d) contain provisions for adequate water supply for firefighting purposes</p>	<p><b>Yes.</b> Water supply will comply with <i>PBP</i>.</p>
<p>(e) minimise the perimeter of the area of land interfacing the hazard which may be developed</p>	<p><b>Yes.</b> The perimeter is located on a level terrace and circumscribes the edge of the downslopes resulting in the best design possible. Intrusions of bushland into the development have been removed and minimised to allow safe evacuation.</p>
<p>(f) introduce controls on the placement of combustible materials in the Inner Protection Area.</p>	<p><b>Yes</b> – can be a condition of consent at DA stage.</p>

# Glossary of Terms

AHIMS	Aboriginal Heritage Information System
APZ	Asset protection zone
AS1596	<i>Australian Standard – The storage and handling of LP Gas</i>
AS2419	<i>Australian Standard – Fire hydrant installations</i>
AS3745	<i>Australian Standard – Planning for emergencies in facilities</i>
AS3959	<i>Australian Standard – Construction of buildings in bushfire-prone areas 2009</i>
BAL	<i>Bushfire attack level</i>
BCA	<i>Building Code of Australia</i>
BSA	Bushfire safety authority
EEC	Endangered ecological community
FDI	Fire danger index
IPA	Inner protection area
LEP	<i>Local environmental plan</i>
OPA	Outer protection area
PBP	<i>Planning for bush fire protection 2006</i>
RFS	NSW Rural Fire Service
SFPP	Special fire protection purpose

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# Foreword

*Travers Bushfire & Ecology* ("TBE") has been requested to provide a response to the issues raised by NSW Rural Fire Service ("RFS") in their undated correspondence circa September 2016 regarding the Planning Proposal (PP) for Ralston Avenue, Belrose following the gateway determination. The RFS advise that the Planning Proposal does not conform to the *S117 Direction* and the RFS planning policy entitled *Planning for Bush Fire Protection 2006* ("PBP").

We can advise that the proposed development does comply with the Section 117 Direction, PBP 2006 and AS3959 '*Construction of bushfire prone areas*'. We do note some inconsistencies and amendments have been made to the bushfire protection measures (November 2016) and they are shown on Figure 1 within. This revised plan remains consistent with the *Section 117 Direction* and the specifications and requirements required by *Planning for Bushfire Protection* (2006).

The Planning Proposal amendments include;

1. Increased asset protection zones (APZs) reflecting smoother boundaries, increased depth on the southern aspect and the provision of APZs on the *TransGrid* electrical easements, lands adjacent to Ralston Avenue and Wyatt Avenue and owned by MLALC.
2. A reduction of the reserve (E3 Zone) has occurred (0.90ha to 0.70ha). This is necessary given the need to deny potential for fire entering the site from the north-west aspect; and the need to impose a degree of common sense in respect of protecting the current land owner's responsibilities (re; Section 63 of the *Rural Fires Act*) in respect of the *TransGrid* asset.
3. Improved road alignment in the north east to Wyatt Avenue with larger APZs.
4. Notation of the available fire trails in the vicinity of the *TransGrid* easement zones and beyond.
5. Consideration of a community title approach to APZ management.

We also note the primary concern raised by the RFS was in relation to the slope gradient within the APZ and external to the APZ. We can advise the RFS concerns are incorrect and this is fully explained herein.

## **Regional context of bush fire prone lands**

By way of comparison to the Planning Proposal locality the Sydney basin consists of topography and fuel conditions that contribute to an ever present bushfire potential. The ever expanding urban fringe will in most cases be located adjacent to bushland or grassland and with that comes the likely impact of bush or grass fires. One only needs to look at the existing residential development peripheral to Garigal National Park. Whilst these areas were mostly predominantly developed before the advent of contemporary bushfire planning, it is nonetheless apparent that communities can live in a bushfire prone environment when location suitability work in harmony with effective design solutions.

This Planning Proposal is no different in topography to many nearby residential communities, and significant bushfire planning design measures have been implemented in regard to asset protection zones, road access design as well as the ongoing fuel management of nearby hazards. Notwithstanding the extent of planning undertaken to date is compliant with PBP, it is clearly understood that the RFS require additional defensible space in the form of broader asset protection zones and that has been provided.

By way of contrast the broader Sydney region between the Nepean and Hawkesbury Rivers and out to Blackheath are set amidst vast bushfire prone areas with regular mid to large scale bushfire events occurring between July and February in most years.

The sheer extent and scale of the national park systems that fringe the Sydney environ from the south to the north e.g. Moreton, Blue Mountains, Wollemi, Yengo, Dharug, Popran and Brisbane Water National Parks total some 1.155 million hectares of unmanaged natural landscapes and these contribute to at times long running campaign bushfire events of which the general public would be mostly unaware.

Within the central Sydney zone are many other national parks that fringe river systems such as Ku-ring-gai Chase, Davidson, Lane Cove, Georges River and Cattai. In addition, local government bushland reserves create additional linkages to those national parks and ultimately create a significant fire prone landscape in which millions of residents live, work and play.

A recent analysis undertaken by Macquarie University-affiliated *Risk Frontiers group*<sup>1</sup> (2016) reveals that more than 100,000 households in Sydney and surrounds are exposed to high bushfire risks because they live within 100 metres of bushland. Notably;

- Gosford has 26,595 households
- Blue Mountains regions has 23,068 households
- Hornsby has 19,983 households
- Ku-ring-gai has 15,719 households
- Warringah has 6,592 households

For the existing communities of Warringah fringing the national park and / or Council lands the risk remains continually present and every summer brings with it the potential for dry weather and strong winds which can lead to fire events and community disruption.

The fact that the broader Sydney region is located amidst such a vast bushfire prone landscape is also not lost on the resources applied to protect the communities from that ever present risk. Funding for protective and preventative measures is provided, in the main, from insurance levies and these in turn fund the operation of the two fire services i.e. Fire & Rescue NSW and the NSW Rural Fire Service.

In light of regulatory approach applied to development control in bushfire prone areas then the proposed R2 use of the land is quite appropriate.

There can be no doubt that the Rawson Avenue planning proposal has been subjected to comprehensive bushfire assessment and fuel management planning initiatives. Coupled with the proposed community association management approach the planning proposal fulfils all the requirements of the Section 117 Direction, PBP, DCN 2/12 and AS3959. These measures will encapsulate all the required planning, design and control (measures) for safe residential living and can be provided within the Area Plan for the precinct.

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<sup>1</sup> *Risk Frontiers and MapData Sciences (Address Risk Rating)* <https://www.riskfrontiers.com/arr.htm>

## Communications with RFS

A more detailed response to the matters raised by the RFS has been prepared and is attached. We look forward to meeting with the RFS to discuss this project in detail. The following Table F1 provides a summary (starting from most recent) of the preliminary reporting / assessment phases of the planning proposal and subsequent consultation which has been undertaken in accordance Condition 3 of the Gateway Determination Issued by the Department of Planning and Environment (DPE) and Section 117 Direction 4.4 – Planning for Bushfire Protection.

**Table F.1 – Consultation outcomes**

Comments from Authority	Response from proponent
<p><b>Onsite meeting with NSW RFS representatives – 1st October 2015.</b> RFS issues discussed on site include:</p> <ul style="list-style-type: none"> <li>Request for clarification on how and who will manage the APZ. How it will be funded in perpetuity. Who will hold the fund and what mechanism can be put in place to ensure that the required ongoing management tasks are completed.</li> <li>Width of the APZ in the southern side of the development lots.</li> <li>Classification of the short and tall heath vegetation on the mid northern side of the development area.</li> <li>NSW RFS will not support isolated lots in the north-eastern side of the site (Lots 1, 2 &amp; 3).</li> <li>Amend the Fuel Management Plan with the latest vegetation mapping.</li> </ul>	<p>A site inspection occurred with three (3) officers of the RFS in attendance (Jason Maslen, Garth Bladwell and George Sheppard). They noted the slopes were as per the advice of TBE and that the APZ's were on lands that are either rocky or stable. The RFS referred to one area to the south west that required further detail to be provided in regard to APZ management and road construction. TBE advised this was within PBP acceptable limits but agreed to provide engineering advice regarding road design at DA stage.</p> <p>A revised bushfire protection assessment and fuel management plan have been prepared (December 2015) to detail the matters raised at the site inspection.</p> <ul style="list-style-type: none"> <li>The Fuel Management Plan (FMP) has been updated to provide further clarification outlining funding and ongoing management of the APZ by MLALC.</li> <li>APZ width have been clarified within the Bushfire Protection Assessment (BPA)</li> <li>A forest vegetation formation has been used to determine the APZ distances in this area as identified within the BPA (revision 1 &amp; 2)</li> <li>This was resolved by lot redesign to facilitate the retention and protection of the Duffys Forest vegetation within the E3 zone. The two/three lots are as per PBP 2006 and surrounded by two roads and are therefore not isolated and should be reviewed by the RFS as being permissible.</li> <li>The FMP has been updated to reflect the latest vegetation mapping.</li> </ul>

<p><b>NSW RFS letter – 9th July 2015</b></p> <p>In response to advice that that the DPE has issued the developer with an E3 Environmental Management zoning.</p> <ul style="list-style-type: none"> <li>• RFS raise the same previous concerns about APZs on steep lands</li> <li>• Further site analysis required on behalf of the applicant to identify suitable areas for possible development</li> <li>• RFS advise that there is opportunity for limited development adjoining established residential areas along Ralston Avenue.</li> </ul>	<p>TBE response – see below</p>
<p><b>NSW RFS letter – 26<sup>th</sup> June 2015.</b> Provision of additional comments:</p> <ul style="list-style-type: none"> <li>• Location of APZ on slopes greater than 18 degrees in not supported in general.</li> </ul> <p>Proposal to develop a Fuel Management Plan (FMP) to address the issue of APZs on steep slope in unsupported. The submission of a FMP at development application stage to address these issues in considered too late in the process and is unacceptable.</p> <ul style="list-style-type: none"> <li>• Majority of APZ's will not be located within individual allotments which will remain privately own. The question is who would enforce a positive covenant and who would undertake the APZ works.</li> <li>• APZ's are proposed in E2 zoned land which may conflict with the objectives of the zone.</li> <li>• An additional 1m APZ where slopes exceed 18 degrees is considered</li> </ul>	<p>TBE letter of response to the NSW RFS – 11th August 2015</p> <ul style="list-style-type: none"> <li>• TBE recommend RFS visit the site to appreciate the bushfire risk and that an FMP has been prepared to address feasibility and ongoing management of the APZs.</li> </ul> <p>Further slope analysis plans were prepared to highlight areas where slopes exceed 18 degrees. TBE advised that where slopes did exceed 18 degrees (in limited cases) it consisted of rock ledges, devoid of fuel which aid in reducing the overall bushfire risk.</p> <ul style="list-style-type: none"> <li>• The land owner responsible for ongoing management of the E3 zoned land is MLALC. This is to be enforced under a positive covenant in accordance with the FMP. The APZ is to be self-managed with audits undertaken by specialist firms. On-going funds for management will be from the development consortium.</li> <li>• Proposed zoning was amended from E2 to E3 and an FMP was prepared to address ecological constraints and any zoning conflicts.</li> <li>• The APZ was determined based on AS3959 which identifies an APZ</li> </ul>

<p>inconsequential to compensate for the additional increase in slope.</p> <ul style="list-style-type: none"> <li>• A 100m Strategic Fire Advantage Zone (SFAZ) is expected to fall to the NSW RFS creating an additional burden on existing resources.</li> <li>• Recommendation to edge the SFAZ with a fire trail is considered unachievable given the terrain. Addition of fire trails will create an additional financial burden of the RFS</li> </ul>	<p>of 61m adjacent to forest vegetation on slopes of &gt;15 to 20 degrees. Further slope analysis was provided and RFS concern should now be resolved.</p> <ul style="list-style-type: none"> <li>• FMP was prepared to refine location of the SFAZ within land owned and managed by MLALC. Ecological burning is recommended in accordance with the FMP. SFAZ is not a burden and falls in line with contemporary bushfire planning initiatives with the funding model an agreed protocol with contributions from insurance companies, state &amp; local government.</li> <li>• An FMP has been prepared and existing fire trails will be enhanced and managed in accordance with FMP. The land is not owned by the RFS so it is not burden.</li> </ul>
<p><b>Office of Environment and Heritage (OEH) Letter – 27<sup>th</sup> February 2015</b></p> <ul style="list-style-type: none"> <li>• NSW RFS has confirmed that the proposal does not comply with PBP 2006. Resolution of the bushfire protection measures is required before further consideration can be given to the biodiversity impact.</li> <li>• It is likely that the APZs will need to be revised in order to ensure the proposal complies with bushfire planning guidelines</li> </ul>	<p>TBE letter of response to NSW RFS &amp; Office of Environment &amp; Heritage (OEH) – 4<sup>th</sup> May 2015</p> <ul style="list-style-type: none"> <li>• RFS noted that they were not opposed to development of the site. FMP to be prepared to further outline proposals compliance with PBP.</li> <li>• Modification of APZs may occur as a result of final development design, fuel management or other relevant studies.</li> <li>• Further details were provided on the scope of the FMP and a timeline for its development.</li> </ul>
<p><b>NSW Rural Fire Service (RFS) letter – 20<sup>th</sup> February 2015.</b> RFS advise that they are not opposed to the development in principle and reiterate their concerns expressed in previous correspondence (6<sup>th</sup> June). These concerns include:</p> <ul style="list-style-type: none"> <li>• Do not support location of APZs on land exceeding 18 degrees and</li> </ul>	<p>Travers bushfire &amp; ecology (TBE) letter of response to the NSW RFS &amp; Office of Environment &amp; Heritage (OEH) – 4<sup>th</sup> May 2015</p> <ul style="list-style-type: none"> <li>• RFS regularly permit APZ's on land &gt;18 degrees and PBP permits</li> </ul>

<p>recommend a modified lot layout</p> <ul style="list-style-type: none"> <li>• BAL ratings under AS3959 are valid were the effective slope does not exceed 20 degrees. The slopes on site often exceed this.</li> <li>• Requirement for public road widths are to comply with PBP regardless of final ownership. Perimeter roads are to have 8m width. All other roads 6.5m</li> </ul>	<p>the development of an alternate solution. The APZ's within the site, for the most part, are well below 18 degrees. The APZ's on steeper land consist of sandstone outcrops.</p> <ul style="list-style-type: none"> <li>• TBE advised a fuel management plan would be prepared illustrating slope gradients to comply with PBP.</li> <li>• TBE concur that public roads are to comply with PBP requirements.</li> </ul>
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# Introduction

# 1

*Travers bushfire & ecology* has been engaged to undertake a bushfire protection assessment (second revisions) for the proposed rezoning located at Lot 1 DP 1139826, located at the end of Ralston Avenue, Belrose.

The proposal is located on land mapped by *Northern Beaches Council* as being bushfire prone. *Direction 4.4, Planning for bush fire protection* identifies matters for consideration for planning proposals that will affect, or are in proximity to land mapped as bushfire prone.

As such the proposal is subject to the requirements of Section 117(2) of the *Environmental Planning and Assessment Act 1979 (EP&A Act)* which requires Council to consult with the Commissioner of the *NSW Rural Fire Service* and to take into account any comments by the Commissioner.

## 1.1 Aims of the Assessment

The aims of the bushfire protection assessment are to:

- Review the bushfire threat to the landscape
- Undertake a bushfire attack assessment in accordance with *PBP*
- Provide advice on planning principles, including the provision of perimeter roads, asset protection zones (APZs) and other specific fire management issues
- Review the potential to carry out hazard management over the landscape, taking into consideration the proposed retention of trees within the final development plans.

## 1.2 Project Synopsis

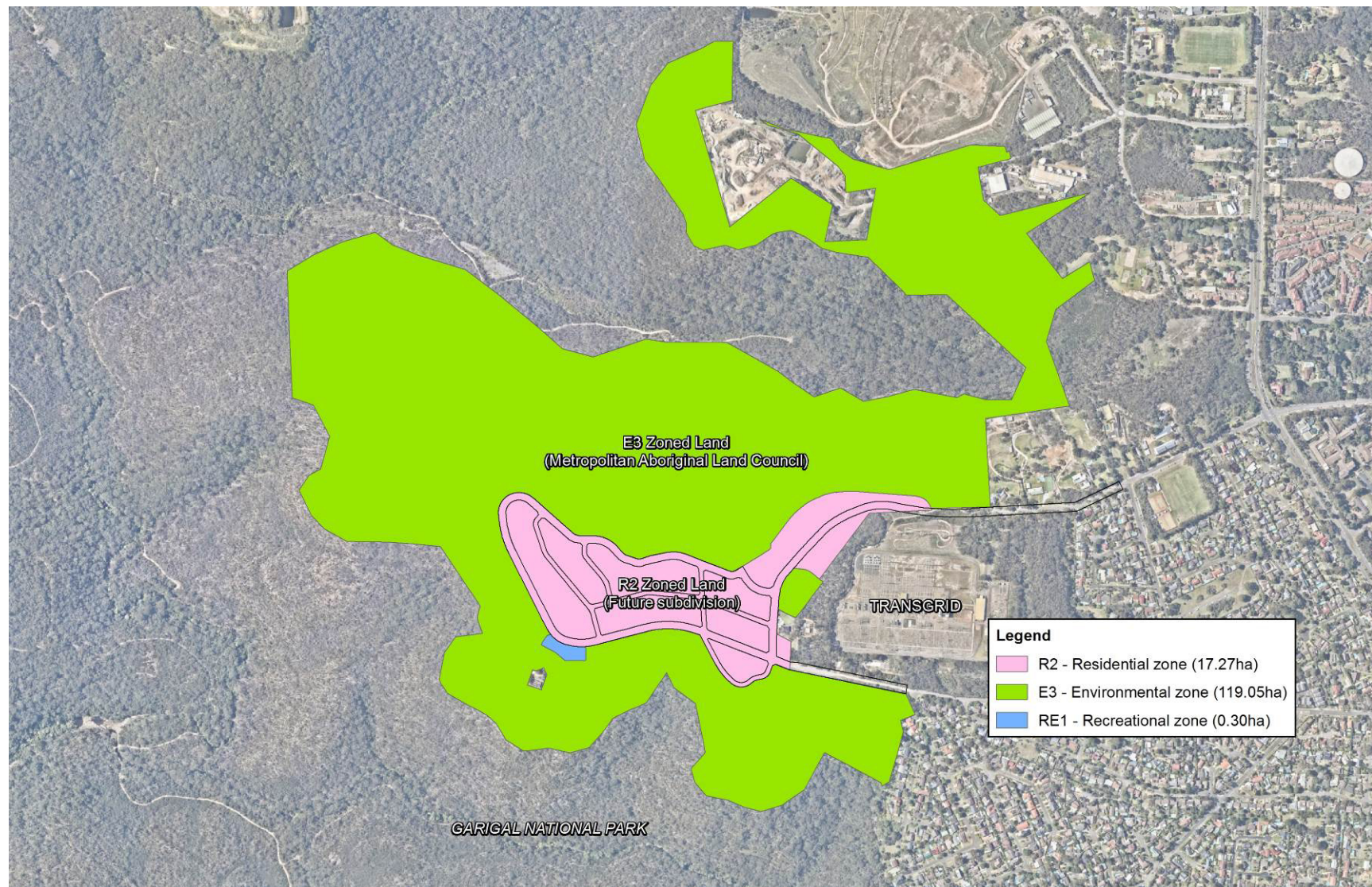
The planning proposal (refer Figure 1.1) aims to create three (3) distinct land uses / zones;

- **Development precinct** - 17.27ha portion of Lot 1 DP 1139826 for future residential development (Zoned R2). A small pocket park of 0.3ha in size will be zoned as RE1.
- **Conservation Lands** - This environmental management zone will be used as a biodiversity offset. The conservation lands will be zoned as E3 Environmental Management to allow integrated management of the asset protection zones and conservation lands by the future Community Association and Metro Local Aboriginal Land Council. The proposed offset area is an ecologically significant landscape which is known to contain threatened flora, fauna, ROTAP species and the EEC, Coastal Upland Swamp. It will create a conservation parcel which would ideally become an addition to Garigal National Park (with dual management with Community Association), or alternatively become a BioBank site.

- **Asset protection zones** - Creation of asset protection zones – proposed to be zoned as part of the E3 zoned land. These lands will be managed as asset protection zones in full compliance with NSW Rural Fire Service limitations in regard to APZ management. Habitat retention will be a key priority for the fuel management works given the dual role that the asset protection zones play in buffering the impacts of development on the urban/ bushland interface. Retention of trees, shrubs and surface fuels will be targeted for their intrinsic ecological value with ongoing management specified through a legally applied 'fuel management plan'.

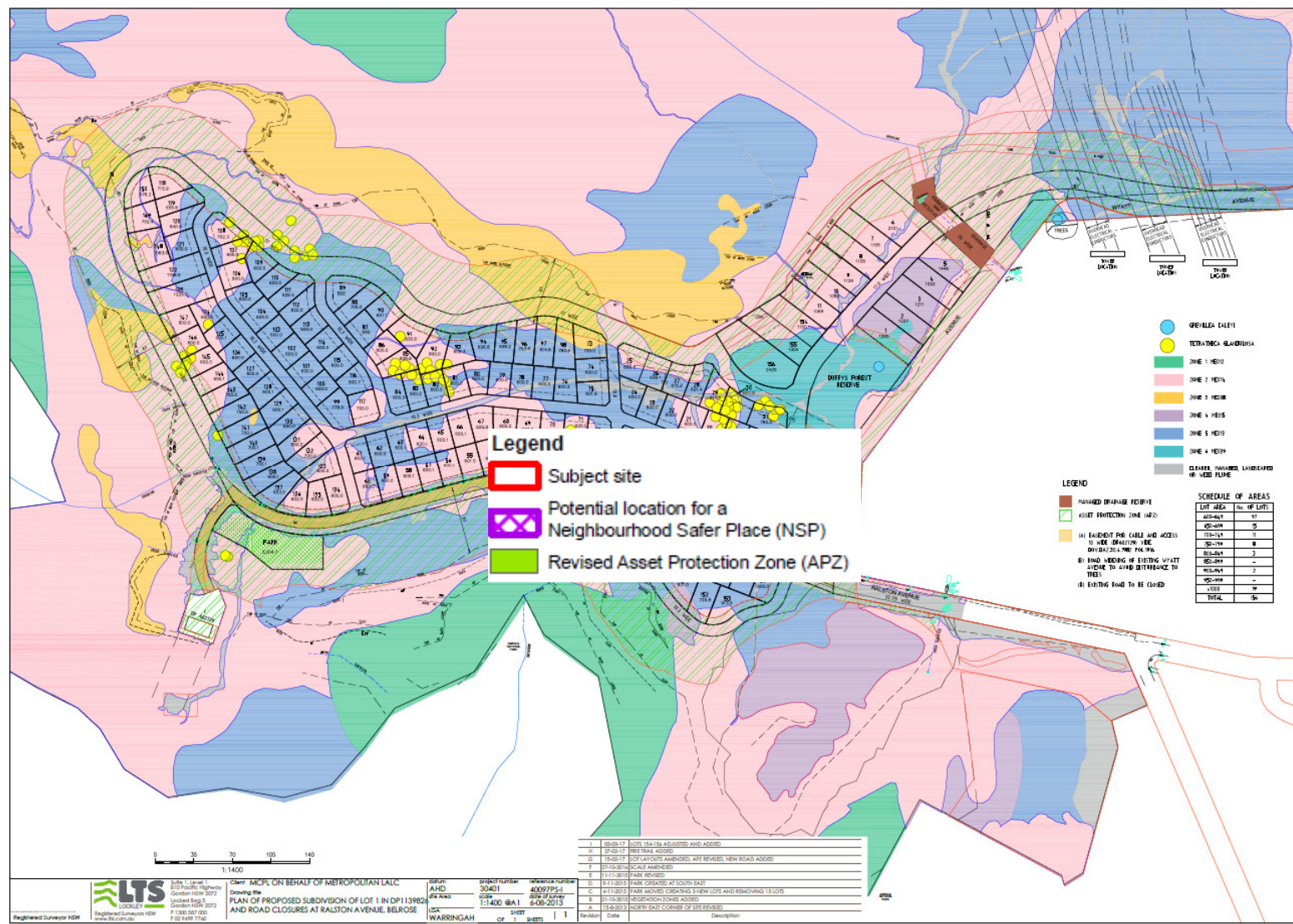
The plan of proposed subdivision (refer Figure 1.2) provides for approximately 156 lots, which are anticipated to range in size from 600 –2,425m<sup>2</sup>. The actual dwelling mix and type will be determined at the development application stage.

The bushfire constraints have been highlighted and asset protection zones (APZ) have been recommended, based on the concept subdivision plan. Recommendations have also been made for future road and fire design, fuels management, traffic management, emergency management, building construction, water supply and peripheral land management.



**Figure 1.1 – Proposed zoning (LTS Lockley – 22/03/17)**





## 1.3 Information Collation

To achieve the aims of this report, a review of the information relevant to the property was undertaken prior to the initiation of field surveys. Information sources reviewed include the following:

- Plan of proposed rezoning prepared by *TBE*, dated 22/03/2017
- Plan of proposed subdivision prepared by *LTS Lockley*, dated 3/3/2017
- Warringah Local Environmental Plan 2011
- Warringah Local Environmental Plan 2000
- Fuel Management Plan, 2015 prepared by *Travers bushfire & ecology*
- Ecological Assessment, 2015 prepared by *Travers bushfire & ecology*
- *Google* aerial photography
- Topographical maps *DLPI of NSW* 1:25,000
- *Planning for bush fire protection 2006 (NSW RFS)*
- Australian Standard 3959 *Construction of buildings in bush fire prone areas*
- *Community Resilience Practice Notes 2/12 Planning Instruments and Policies*.

An inspection of the proposed development site and surrounds was undertaken by John Travers on several occasions in 2011 and 2017 to assess the topography, slopes, aspect, drainage, vegetation and adjoining land use. The identification of existing bushfire measures and a visual appraisal of bushfire hazard and risk were also undertaken.

## 1.4 Site Description

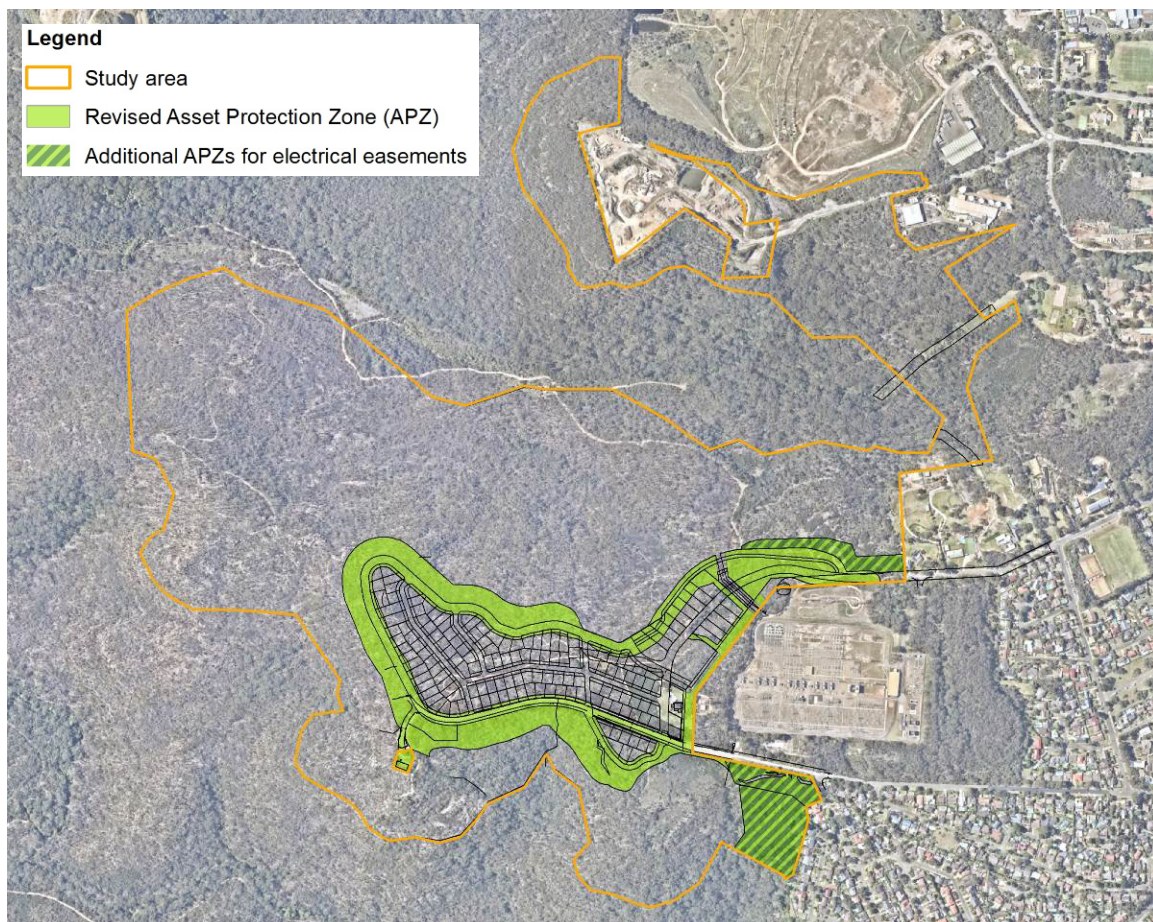
The site is located at Lot 1 DP 1139826, Ralston Avenue, Belrose (refer Figure 1.3). The proposed development area is located on a plateau area of approximately 17 ha. The development area is proposed to be accessed from residential areas to the east via Ralston and Wyatt Avenue. The remaining perimeter to the north, west and south is gentle to steep sloping sandstone escarpments that consist of a variety of vegetation formations ranging from forest to heathland communities.

Table 1.1 provides a summary of the planning, cadastral, topographical, and disturbance details of the subject site.

**Table 1.1 – Site features**

<b>Location</b>	Lot 1 DP 1139826
<b>Size</b>	Approximately 17ha (development land only)
<b>Local government area</b>	Northern Beaches Council
<b>Grid reference</b>	333600E 6266800N
<b>Elevation</b>	Approximately 150-170m AHD
<b>Topography</b>	Situated upon a plateau area with minor slopes, increasing near the northern and southern subdivision boundary.
<b>Geology and soils</b>	Geology; Sandstone Soils; Lambert Soil Landscape, Somersby Soil Landscape and Hawkesbury Soil Landscape
<b>Catchment &amp; drainage</b>	French's Creek (to the south) and Fireclay Creek (to the north) into Middle Harbour Creek.
<b>Vegetation</b>	Coastal Sandstone Heath and Sydney Sandstone Ridgetop Woodland (predominately)
<b>Existing land use</b>	Private land and residential
<b>Clearing</b>	Clearing for the existing residence and asset protection zones, and any road, track and existing electrical structure





**Figure 1.3:** Aerial Appraisal of investigation area

## 1.5 Legislation and Planning Instruments

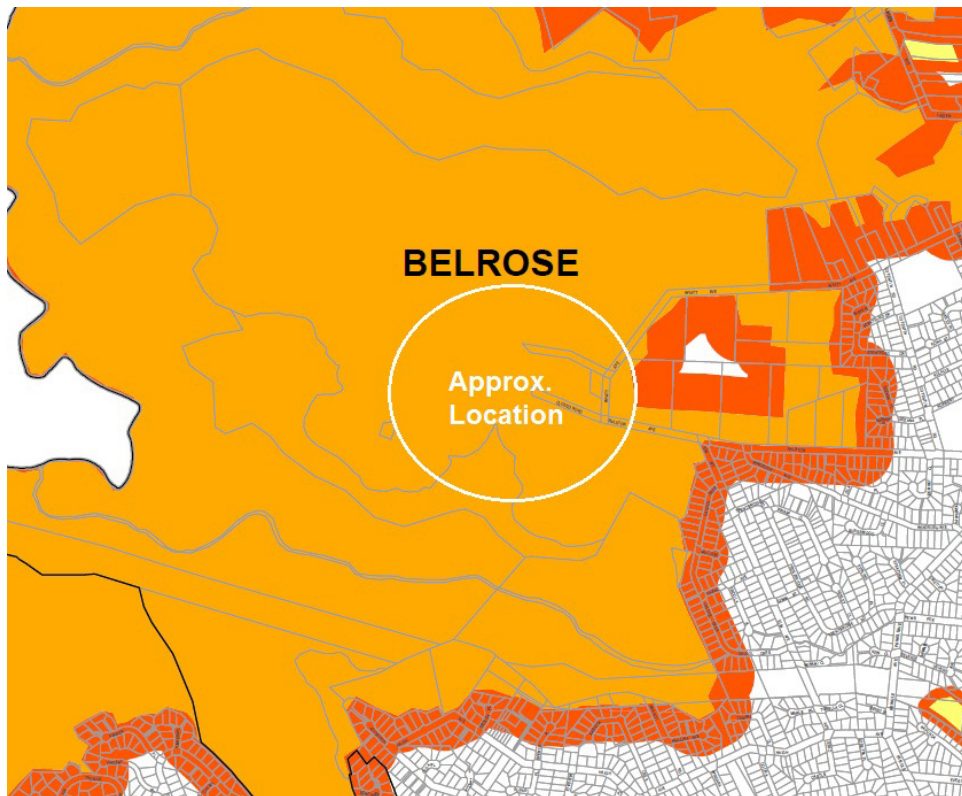
### 1.5.1 *Environmental Planning and Assessment Act 1979 (EP&A Act) and bushfire prone land.*

The *EP&A Act* governs environmental and land use planning and assessment within New South Wales. It provides for the establishment of environmental planning instruments, development controls and the operation of construction controls through the *Building Code of Australia*. The identification of bushfire prone land is required under Section 146 of the *EP&A Act*.

Bushfire prone land maps provide a trigger for the development assessment provisions. The proposed rezoning is located on land that is mapped by *Northern Beaches Council* as being bushfire prone (refer Figure 1.4).

*PBP* (pg 4) stipulates that if a proposed amendment to land use zoning or land use affects a designated bushfire prone area then the Section 117(2) Direction No 4.4 of the *EP&A Act* must be applied. This requires Council to consult with the Commissioner of the *NSW RFS* and to take into account any comments by the Commissioner and to have regard to the planning principles of *PBP* (detailed within Section 1.5.3).





**Figure 1.4: Bushfire Prone Land Map**  
(Source: Northern Beaches Council Council)

### **1.5.2 Local Environmental Plan (LEP)**

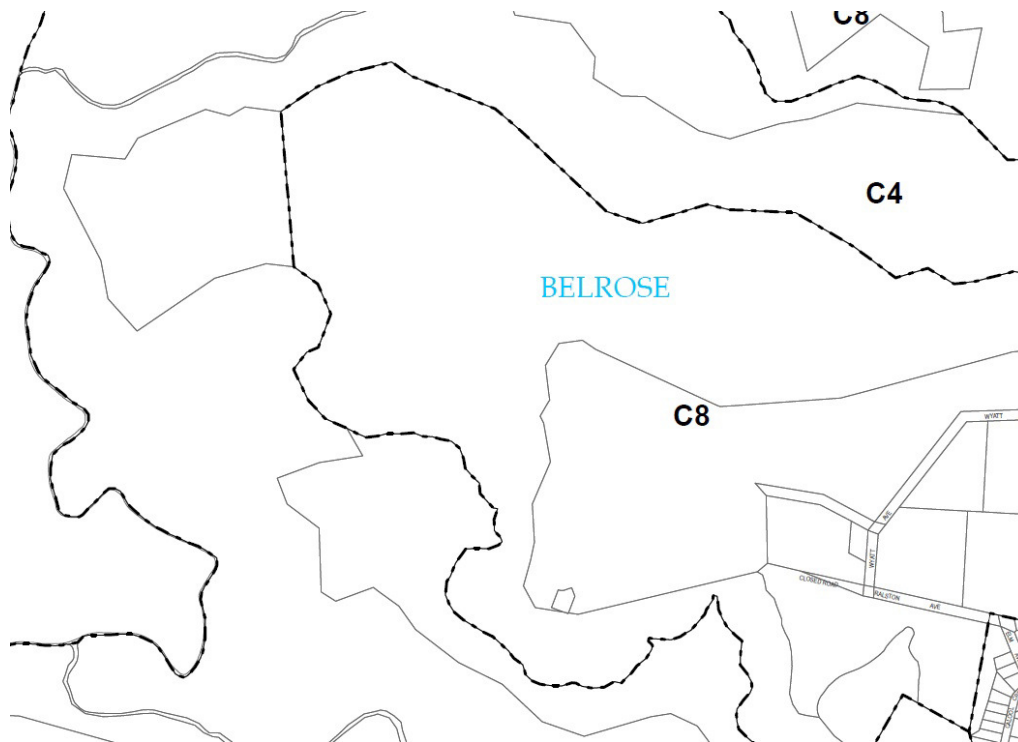
A LEP provides for a range of zonings which list development that is permissible or not permissible, as well as the objectives for development within a zone.

The site is identified on the Warringah LEP 2011 Land Application Map as a 'deferred matter'. LEP 2000 applies to all deferred land until a review of deferred lands is complete and a planning proposal process is undertaken to bring this land into Warringah's standard LEP 2011.

#### Warringah Local Environmental Plan (LEP) 2000

The site is zoned under *Warringah LEP 2000* as Locality C8 – Belrose North (refer Figure 1.5). The land surrounding the property to the north, south and west is zoned under the current LEP 2011 as E1 – National Parks and Reserves.

The proposal seeks to amend the *LEP 2000* and contribute to the planning process to bring this land into Warringah's standards LEP. The proposal is to rezone the central development area as R2 low density residential whilst maintaining the land surrounding the development as an offset area will be rezoned as E3 – Environmental Management. The proposal also includes the rezoning of a small parcel of land to RE1 – Public Recreation.



**Figure 1.5:** Warringah LEP 2000  
(Source: Northern Beaches Council website)

The proposal, including the provision of APZs, would seek to comply with the objectives of the proposed rezoning.

### **1.5.3 Planning for bush fire protection 2006 (PBP)**

Bushfire protection planning requires the consideration of the *NSW RFS* planning document entitled *Planning for bush fire protection 2006 (PBP)*. *PBP* provides planning principles for rezoning to residential land as well as guidance on effective bushfire protection measures.

The policy aims to provide for the protection of human life (including fire fighters) and to minimise impacts on property and the environment from the threat of bushfire, while having due regard to development potential, on site amenity and protection of the environment.

*PBP* outlines the following planning principles that must be achieved for all rezoning proposals:

1. Provision of a perimeter road with two way access which delineates the extent of the intended development.
2. Provision, at the urban interface, for the establishment of adequate asset protection zones for future housing
3. Specifying minimum residential lot depths to accommodate asset protection zones for lots on perimeter roads
4. Minimising the perimeter of the area of land interfacing the hazard, which may be developed

5. Introduction of controls which avoid placing inappropriate developments in hazardous areas, and
6. Introduction of controls on the placement of combustible materials in asset protection zones.

In addition to the above, *PBP* outlines the bushfire protection measures required to be assessed for new development in bushfire prone areas.

The proposed rezoning has been assessed in compliance with the following measures to ensure that future development is capable of complying with *PBP*:

- Asset protection zones
- Building construction and design
- Access arrangements
- Water supply and utilities
- Landscaping
- Emergency arrangements

#### **1.5.4 Building Code of Australia (BCA) and the Australian Standards AS3959 - 2009**

The *BCA* is given effect through the *EP&A Act* and forms part of the regulatory environment of construction standards and building controls. The *BCA* outlines objectives, functional statements, performance requirements and deemed-to-satisfy provisions. For residential dwellings these include Class 1, 2 & 3 buildings. The construction manual for the deemed-to-satisfy requirements is the *Australian Standard AS3959 2009*.

Although consideration of *AS3959* is not specifically required in a rezoning proposal, this report (Section 3.2) provides the indicative setbacks for each dwelling construction level and can be used in future planning for master plans and / or subdivision proposals.

## **1.6 Environmental & Cultural Constraints**

### **1.6.1 Environmental Constraints**

The proposed development is in accord with the ecological constraints and offset analysis prepared by *Travers bushfire & ecology* (November 2017) – see ‘survey effort’ constraints plan at Figure 1.6 and 1.7