

Our Ref: A15056B2: JT  
Council Ref: PEX2013/0003 & 2016/274281  
RFS REF: LEP/0129



4 November 2016

The General Manager  
Northern Beaches Council  
Civic Centre, 725 Pittwater Road  
DEE WHY NSW 2259

**Attention:** Mr M Ferguson

Dear Mark

**Re: Ralston Avenue Planning Proposal  
Response to the NSW Rural Fire Service (RFS)**

*Travers Bushfire & Ecology* ("TBE") has been requested to provide a response to the issues raised by NSW Rural Fire Service ("RFS") in their second round of correspondence 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 and they are shown on Figure 1.

The Planning Proposal amendments include;

1. Increased APZ's reflecting smoother boundaries, increased depth on the southern aspect and the provision of APZ's on the TransGrid electrical easements lands adjacent to Ralston Avenue and Wyatt Avenue.
2. A reduction of the reserve (E3 Zone) has occurred (0.90ha to 0.66 ha). This is provided given the need to deny fire entering the site from the northwest aspect; and the need to impose a degree of common sense in respect of protecting the 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.
4. Provision of several new fire trails in the vicinity of the TransGrid electrical facility and easement zones; and the landscape west of the Duffys Forest community.

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 these concerns are incorrect. Figure 2 shows the true extent of forested lands located on slopes >20 degrees.

No changes have occurred to the sensitive habits features and vegetation systems as recommended by the three (3) ecological expert reports i.e. no additional APZ's extend into these areas. Slight changes to offset values will result from the above changes. This revised plan remains consistent with the *Section 117 Direction* and the specifications and requirements required by *Planning for Bushfire Protection* (2006).

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.

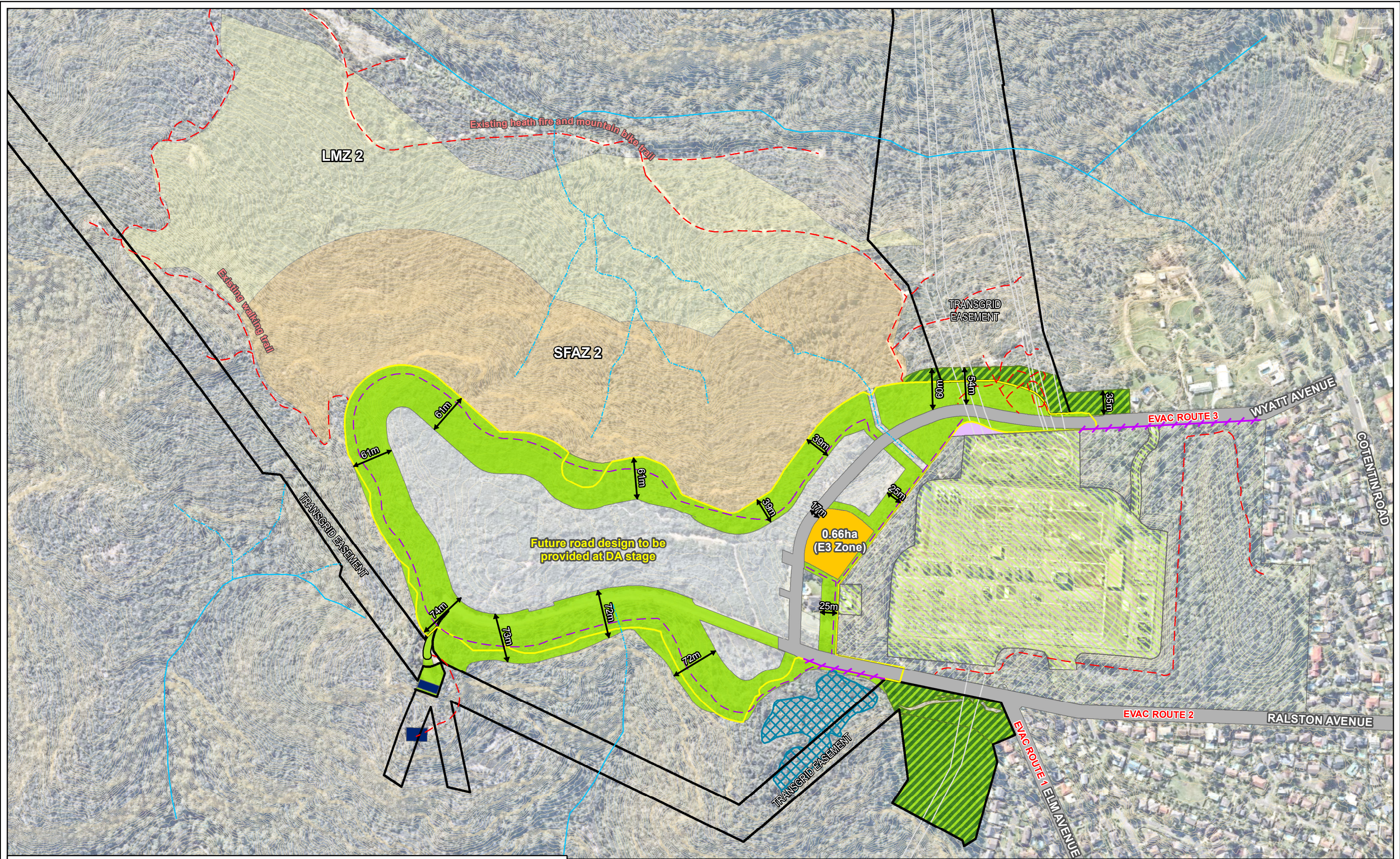
This Planning Proposal is no different in topography to many nearby residential communities, and significant bushfire planning design measures have been implemented in regard to asset protection zones, road access design as well as the ongoing fuel management of nearby hazards. Notwithstanding the extent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

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.

Yours sincerely

A handwritten signature in black ink, appearing to read 'John Travers', with a large loop at the end of the name.

John Travers  
Director – ***Travers bushfire & ecology***



Legend			
	Evacuation route		Existing fire / walking trail
	Transgrid assets		3m radiant heat barrier
	Ecological protection area		Creek line
	Area of <i>G.caleyi</i> specimens (August, 2015)		Ephemeral line
	Coastal Upland Swamp (low fire hazard)		Contour (1m) (source: LiDAR)
	Proposed track		Transgrid managed land
	Land subject to Transgrid Bushfire Management Plan (BMP)		Previous Asset Protection Zone (APZ)
	Revised Asset Protection Zone (APZ)		Additional APZs for electrical easements
	Land Management Zone		Strategic Fire Advantage Zone

Aerial source: Nearmap

Disclaimer: 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.

**PROJECT & MXD REFERENCE**  
 Ralston Avenue, Belrose  
 A15056B2\_BF006

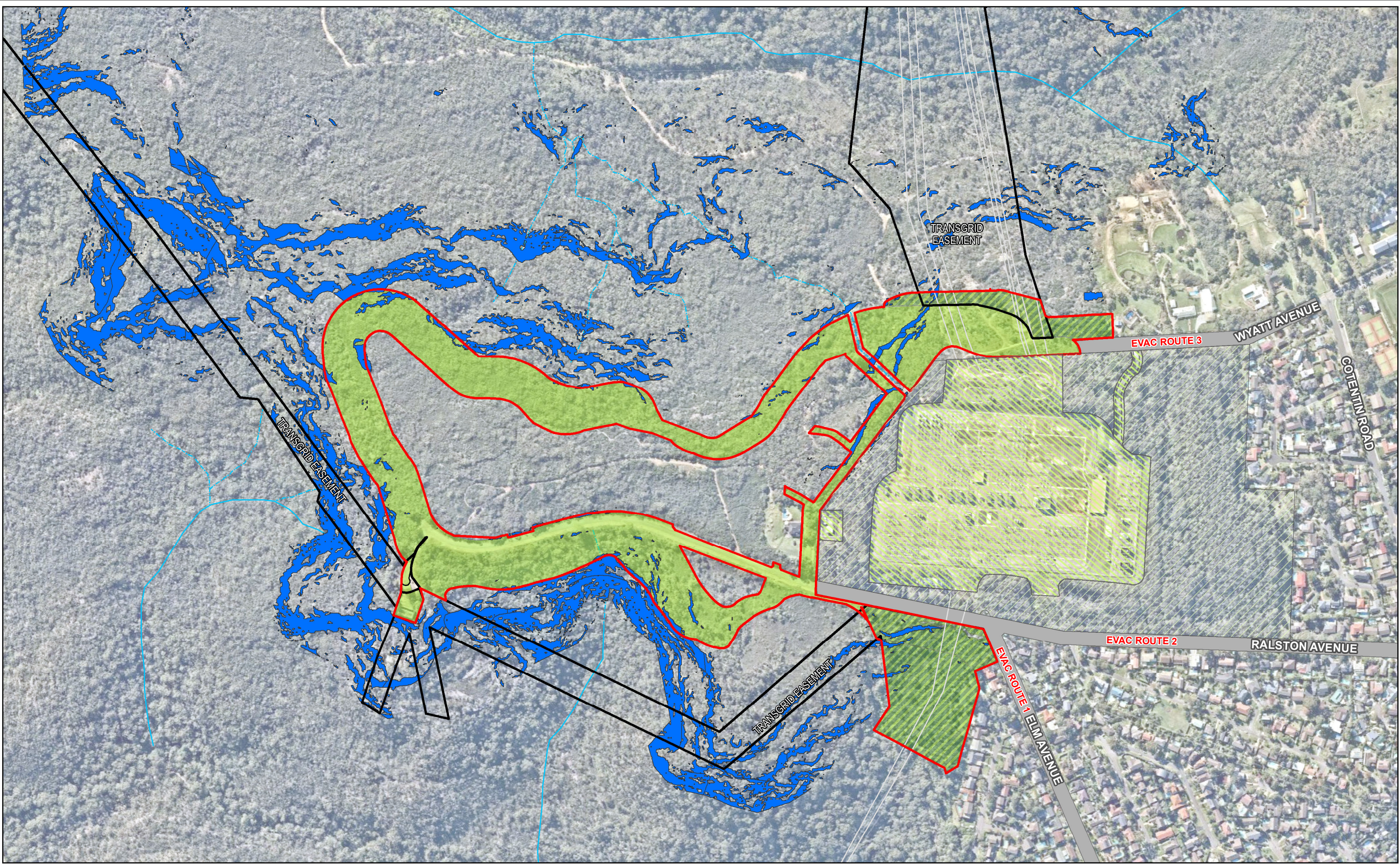
**DATE & ISSUE NUMBER**  
 3/11/2016  
 Issue 1

**SCALE & COORDINATE SYSTEM**  
 1:5,000 @A3  
 GDA 1994 MGA Zone 56

**TITLE**  
**Figure 1 - Revisions to Planning Proposal (Bushfire)**

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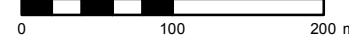




**Legend**

- Entire APZ
- Revised Asset Protection Zone (APZ)
- Transgrid managed land
- Additional APZs for electrical easements
- Land subject to Transgrid Bushfire Management Plan (BMP)
- Forest vegetation located on slopes greater than 20° (Source : TBE ,2015)

Aerial source: Nearmap

Disclaimer: 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.

PROJECT & MXD REFERENCE  
 Ralston Avenue, Belrose  
 A15056B2\_BF008

DATE & ISSUE NUMBER  
 3/11/2016  
 Issue 1

SCALE & COORDINATE SYSTEM  
 1:5,000 @A3  
 GDA 1994 MGA Zone 56

TITLE  
**Figure 2 - Forest vegetation located on slopes >20 degrees**



## **Response to the NSW Rural Fire Service Correspondence September 2016**

The RFS correspondence received September 2016 raised concerns regarding the consistency of the Proposal in its current form with the *S117 Direction* and the RFS planning policy entitled *Planning for Bush Fire Protection 2006 (PBP)*.

The Section 117 Direction permits development within bushfire prone areas but importantly it requires any such development to *'protect life, property and the environment from bush fire hazards by discouraging the establishment of incompatible land uses in bush fire prone areas and to encourage sound management of bush fire prone areas'*

Section 4.4 of the Direction establishes the bushfire planning criteria for the compilation of any planning proposal. Subsections 1, 5 & 6 deal with actual criteria whilst Sections 2, 3, 4 & 7 are procedural matters for Council and or the RFS.

### Objectives

(1) *The objectives of this direction are:*

- (a) to protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and*
- (b) to encourage sound management of bush fire prone areas.*

(5) A planning proposal must:

- (a) have regard to Planning for Bushfire Protection 2006*
- (b) introduce controls that avoid placing inappropriate developments in hazardous areas, and*
- (c) ensure that bushfire hazard reduction is not prohibited within the APZ.*

(6) *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 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,*

*(b) for infill development (that is development within an already subdivided area), where an appropriate APZ cannot be achieved, provide for an appropriate performance standard, in consultation with the NSW Rural Fire Service. If the provisions of the*

*planning proposal permit Special Fire Protection Purposes (as defined under section 100B of the Rural Fires Act 1997), the APZ provisions must be complied with,*

*(c) contain provisions for two - way access roads which links to perimeter roads and/or to fire trail networks,*

### **Response to the Section 117 (2) Direction**

1. (a) *to protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and*

#### **Response – Paragraph 2 RFS Letter**

The Planning Proposal has been designed to provide a safe place to live, and along with that objective, a comprehensive hazard management plan has been prepared and this accompanies the Planning Proposal.

In regard to concern regarding incompatible land uses such as child care centres, educational establishments, group homes, hospitals, nursing homes, boarding houses and or bed and breakfast accommodation etc, such uses are not proposed by the Planning Proposal.

The RFS advise that the proposed residential zoning of R2 could lead to incompatible land uses such as child care centres, community facilities, educational establishments, group homes, health consulting rooms, hospitals, places of public worship, respite day care centres and or veterinary hospitals.

Indeed all of these require Consent by Council in accord with Section 79BA of the *EPA Act* or S90 of the *EPA Act* and if they are a *special protection purpose* then they also require approval from the RFS in accordance with Section 100B of the Rural Fires Act.

The applicant has indicated its willingness to agree as part of any development consent to any necessary conditions of consent, covenants or agreements as part of a Planning Agreement to limit any land uses other than dwelling houses as proposed. The community management statement for the community title development may also assist this through restrictions on incompatible land uses as a guiding influence.

Residential development, on the other hand, is not regarded as incompatible as residential communities are regarded as being able to self-evacuate without the assistance of emergency services.

(b) *to encourage sound management of bush fire prone areas.*

#### **Response**

The Planning Proposal provides for the effective management of all asset protection zones through an integrated, contiguous and professional approach by the landowner, the Metropolitan Local Aboriginal Land Council. The proposal will provide for a formal structure to manage the bushland and decrease any current risk to existing, future residences and public assets.

This means that the land to which the hazard management would occur was not owned by the future residents but rather the existing adjoining landowner to whom the residents would rely upon to manage the hazards.

The RFS correspondence is not entirely clear on this point but it has been assumed they require that ownership of the hazard management zone should rest with the residents. In this regard the Planning Proposal can be changed so that the residents form a community association under the provision of Community Title with funding of all ongoing works by those residents. We seek the advice of RFS as to whether this position is required.

Initial works to form the APZ will be undertaken by the developer in accordance with the fuel management plan already prepared for the site, and be carried out to the satisfaction of the RFS all prior to lot registration and any build form being located on the development.

Auditing of the works will occur twice per year by an independent arrangement; and respond to the fuel management works outlined in the final fuel management plan approved through the development application processes.

This will see management of all the hazards undertaken to comply with the requirements of *Planning for Bush Fire Protection* and their accompanying document that deals with managing APZ's entitled *Standards for Asset Protection Zones* (2006).

2. (a) *have regard to Planning for Bushfire Protection 2006*  
(b) *introduce controls that avoid placing inappropriate developments in hazardous areas, and*  
(c) *ensure that bushfire hazard reduction is not prohibited within the APZ.*

### **Response**

The Planning Proposal including the revised plan depicted at Figure 1 complies with *Planning for Bush Fire Protection*.

As previously stated, the Planning Proposal only proposes appropriate dwelling house development, and will restrict other uses in line with previous comments, and will be assisted by the community management statement for the community title development.

Similarly, the hazard reduction needs can be articulated in the community management statement which refers to the formally approved fuel management plan, which ensures that bushfire hazard reduction is not prohibited within the APZ.

6. *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 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,*

### **Response**

The proposed APZ's comply with AS3959 and are based on AS3959 fuel loads for the varying vegetation communities. A perimeter road has been provided.

- (b) *for infill development (that is development within an already subdivided area), where an appropriate APZ cannot be achieved, provide for an appropriate performance standard, in consultation with the NSW Rural Fire Service. If the provisions of the planning proposal permit Special Fire Protection Purposes (as defined under section 100B of the Rural Fires Act 1997), the APZ provisions must be complied with,*

### **Response**

This section is not applicable to the planning proposal.

- (c) *contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks,*

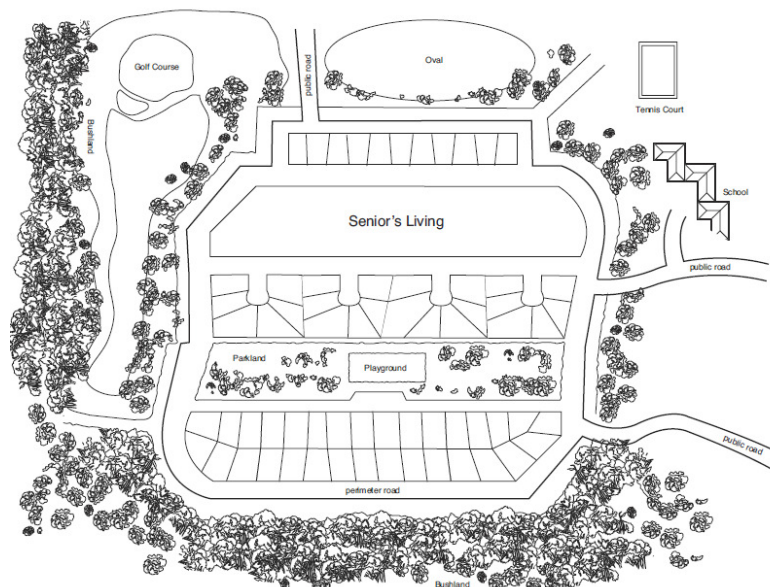
### **Response Paragraph 9 RFS Letter**

The proposal is compliant with PBP. The primary aim of the proposal was to provide internal 'spine' road design that enabled evacuation to occur through the middle of the site and not via the perimeter roads. Perimeter roads were designed in accord with the PBP.

Typically housing is located on the internal edge of the perimeter road but set back sufficiently to be complying with, or less than, BAL 29 AS3959. This is the typical design feature for residential estates and is replicated in Figure 3 below (Extract from Figure 4.1 of PBP on page 16). The figure depicts the perimeter on the bottom of the diagram and illustrates that flame will engulf the perimeter road.

The APZ is located on slopes generally no steeper than 18 degrees in order to ensure land stability following the removal of vegetation. The exception is where there is insitu stable rock and the RFS recognise this substrate will not lead to soil erosion or other environmental damage. This is a common position of the RFS and is not at all remarkable.

Importantly there has been a revised focus on the asset protection zones to eliminate pinch points adjacent to the electrical easement zones. In that regard these electrical easement are now shown as APZ's but mindful that they are not required to be assessed for the Planning Proposal.



**Figure 3** - Extract from Figure 4.1 of PBP on page 16



**Comments by the RFS in their September 2016 correspondence**

*The site is mapped as bushfire prone and is located on an isolated peninsula*

**Response: Paragraph 3 RFS Letter**

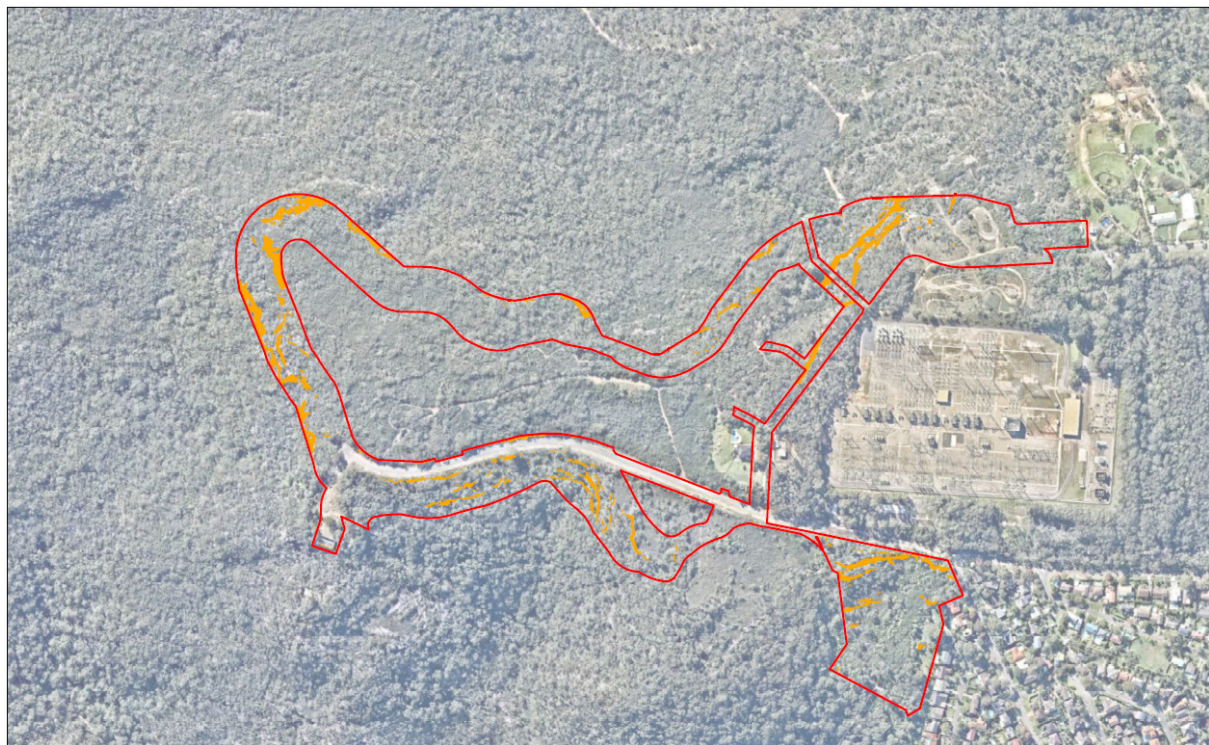
Upon completion the development will provide adjacency to the suburb of Belrose either through development of dwellings/roads or asset protection zones – see Figure 1.

*The site has steep down slopes*

**Response: Paragraph 7 RFS Letter**

The matter of slope assessment has been well researched and provided to the RFS.

In addition, a site inspection occurred on 1 October 2015 with the RFS whereby the slopes occurring within the APZ were visually confirmed as being <18 degrees. Figure 4 below depicts the slopes within the APZ. Only a small area of 18 degree land is affected and these areas are sandstone rock shelves.

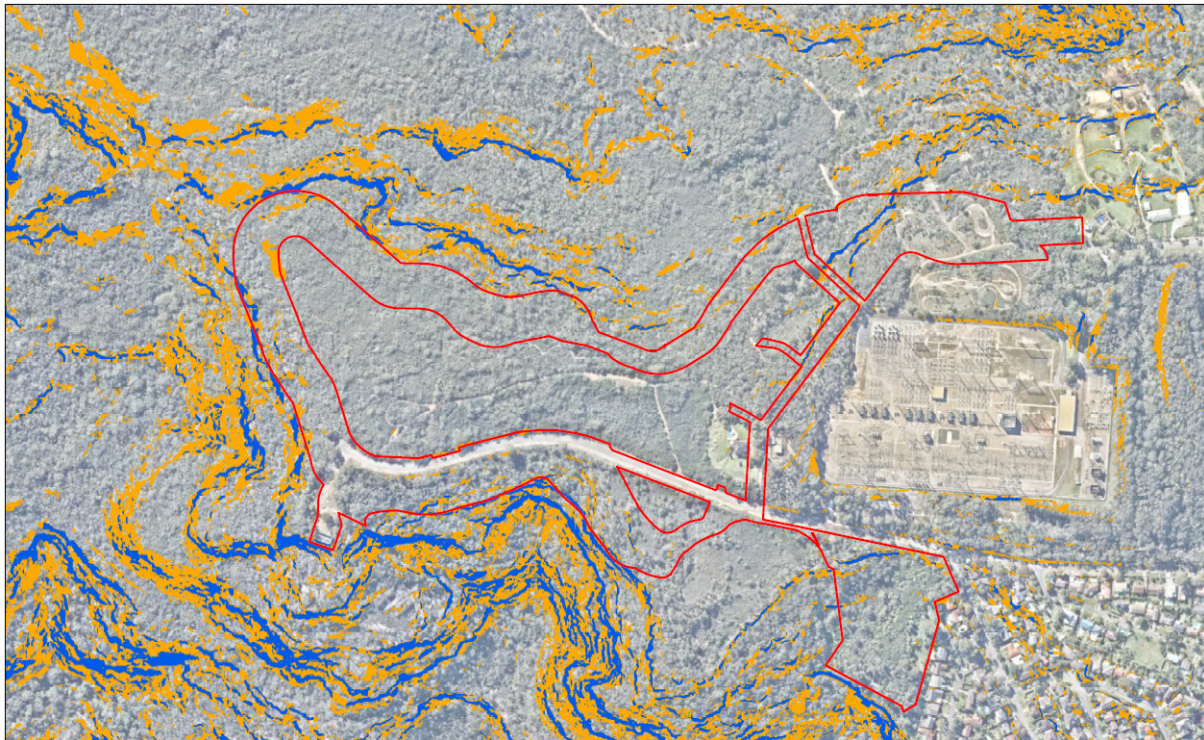


**Slope classification (source: LiDAR)**  
□ 0 - 18°  
■ >18°

**Figure 4** – Slopes analysis within the proposed APZ's

Figure 5 shows the bushfire hazards external to the Planning Proposal area.

This shows the majority of the hazards to the north occur on land less than 20 degrees. There are copious sandstone escarpments making up the yellow and blue coloured lands.



**Slope classification (source: LiDAR)**  
□ 0 - 20°  
■ 20-30°  
■ >30°

**Figure 5 – Slope Analysis external to the APZ**

*Vehicular access to and from the site is problematic due to unmanaged vegetation along Ralston and Wyatt Avenues, with no measures proposed to ensure these evacuation routes remain accessible during a bush fire. The design and layout of the proposal also means that the perimeter road is likely to be cut off in several places during a bush fire, endangering both residents and emergency workers*

**Response: Paragraph 4, 9 RFS Letter**

Several areas located under electrical easements were not identified to contain APZs. These areas are already permitted to be cleared under the provisions of the electrical easement and therefore do not require rezoning and or approval through the Planning Proposal process.

To resolve any confusion these areas are now mapped as APZ's and resolve the pinch points noted by the RFS.

The pinch points are not being affected by sensitive vegetation communities and or sensitive habitat features.

A plan is provided at Figure 1 illustrative of the changes.

The internal road network has been re-designed to ensure evacuation may also occur through the central portions of the development.

The width of the APZ's has been determined using *Lidar* data. Vegetation identification has been confirmed by this firm and a third party ecological firm (EcoLogical). The vegetation communities informed the bushfire attack level and thus the APZ dimension accordingly.

### Ralston Avenue

Part of the area south of the Ralston Avenue landscape is classified as 'coastal upland swamp' which is a wet swamp with vegetation rarely exceeding 1.5 metres and mostly between 1.0-1.5m. This is clearly an area of low hazard and subsequently allows for a reduced asset protection zone. Figure 1 depicts this landscape and its extent.

A small area of heath (20m in width) is adjacent to the swamp and will remain. A small APZ will be located between the heath and the road corridor.

The vegetation within the electrical easement south of Ralston Avenue is a transition from heath to forest and a large part of that area will be managed as an APZ.

This means the whole of the southern edge of Ralston Avenue will be managed as an APZ.

The vegetation on the *TransGrid* side of Ralston Avenue is a narrow vestige of uphill slope (up from the road) and is mostly less than 10-12m in width. Only small portions are greater widths and again these are upslope i.e. up from the road.

There is a wider portion at the eastern end of the *TransGrid* land and that land is 180m in length. The evacuation route no 2 does not require passage along that most eastern 180m portion of *TransGrid* vegetation. Rather the evacuation route turns south onto Elm Avenue, midway along the narrow portion of the vegetation, and heads through the suburban area of Belrose – see Figure 1.

### Wyatt Avenue

The hazardous vegetation north of Wyatt Avenue is affected by heath vegetation (not Forest) and the slopes are predominantly <18 degrees apart from several small sandstone escarpments which are less than 2m in height (field verified by TBE).

Figure 5 above depicts the slopes. The <18 degrees are the uncoloured areas whilst the >18 degrees are the orange coloured areas. The >18 degree slopes are sandstone escarpments.

The proposed APZ areas are shown as a red polygon.

The result is that the APZ for the eastern section of the development have slopes less than 18 degrees in the APZ. The area that depicts slope in excess of 18 degrees in the most northern red polygon will contain the new public road and thus the land will be reshaped.

Photo 1 below depicts Wyatt Avenue (facing west towards the beginning of the Planning Proposal land). The mown land to the left is part *TransGrid* land and part Wyatt Avenue verge.

Photo 2 depicts the reverse angle looking east and shows the residential nature of the street.



**Photo 1** – Looking west along Wyatt Avenue



**Photo 2** - Looking east along Wyatt Avenue

*Future intensive development will exacerbate concerns.*

*In addition to the 159 residential lots the following uses may be permitted under the R2 zone – secondary dwellings, bed and breakfast accommodation, boarding houses, childcare centres, educational establishments, group homes, hospitals – all of which will significantly increase occupation of the site. Many of these uses are Special Fire Protection Purpose and are therefore vulnerable to the effects of fire, often difficult to evacuate and more susceptible to smoke impacts.*

**Response: Paragraph 5 RFS Letter**

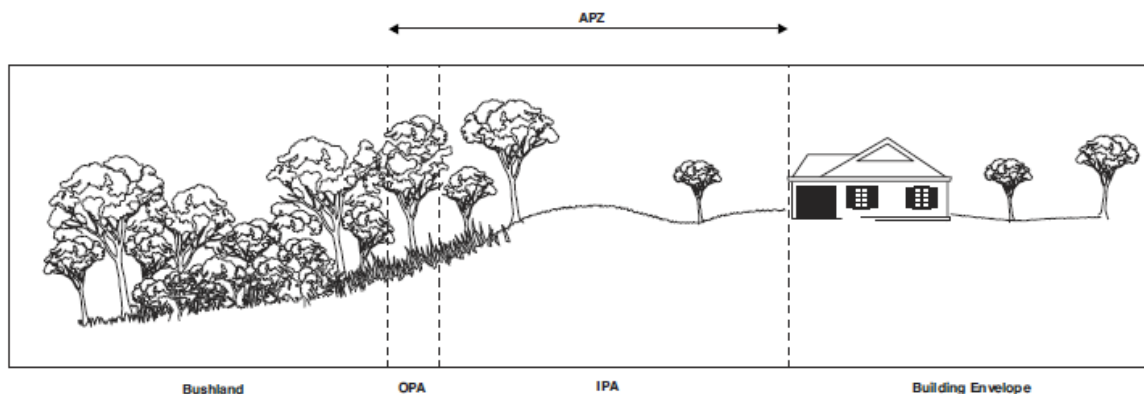
As previously stated, the Planning Proposal considers the provision of dwelling house development only. While other uses are permitted, they are not proposed and would need to satisfy the requirements pertaining to development assessment (79BA) and or RFS approval (S100B). As indicated, the applicant is willing to restrict uses other than dwelling houses.

*The proposal will result in dwellings being located on the interface with slopes exceeding 20 degrees. Current building standards do not provide deemed to satisfy provision for determination of the maximum desired bushfire attack level (BAL 29) in these situations*

**Response: Paragraph 10 RFS Letter**

This is not the case and is dealt with above.

All dwellings will be set well back from the slopes on a level terrace landscape similar to the RFS recommended design below in Figure 6 which is an extract from PBP.



**Figure 6** – Extract from the RFS regarding dwelling on hill tops.

AS3959 provides bushfire attack advice in respect of slopes up to 20 degrees. The extent of slopes exceeding 20 degrees is provided in Figure 2 above and do not predominate across the landscape. The fact that some areas are in excess of 20 degrees has in the past not been an impediment to the RFS approving developments.

*The proposal involves the location of APZs on adjoining non-residential land. Where an APZ is proposed on adjoining land the consent authority must ensure that a suitable mechanism is established for ongoing maintenance of the APZ for the life of the development.*

**Response: Paragraph 8 RFS Letter**

A community title approach appears to be the favoured approach by the RFS. The community association would be bound under a positive covenant to manage the APZ on an ongoing basis as outlined in the fuel management plan and the community management statement with the terms being agreed during the subdivision development application.

Funding will be via a special fund set aside to support integrated fuel management by professional fuel management staff. Similar arrangements have been successfully implemented within the LGA for bush fire prone areas.

Consultation with the TransGrid asset manager team is also intended to effectively manage the surrounding asset protection zones within the TransGrid land. TranGrid currently undertake hazard management at regular periods to protect their major asset in accord with their comprehensive fire management plan.

*The proposed mitigation works to reduce bush fire risk are also not acceptable as they would place increased demand on resources and would not be sustainable.*

*Similarly, the proposed construction of new fire trails linking with existing fire trails is not supported as the engineering works required would further impact the environment.*

### **Response: Paragraph 11 RFS Letter**

Fuel management in the form of APZ maintenance will be undertaken in accordance with the fuel management plan and at the cost of the residents. There would be no burden upon RFS or other government resources services. The fuel management plan issued with the Planning Proposal confirms this approach and confirms appropriate controls can be implemented.

APZs will also be provided to the main access routes and over portions of the transmission line easements – see Figure 1.

The surrounding land has been subject to a number of hazard reduction burns undertaken by the local fire authorities most recently in 2009/10, 2012/13 and 2016. These burns have been undertaken in a safe manner using existing fire trails and walking tracks similar to the way the national parks service manage their adjoining lands.

Indeed the Planning Proposal seeks to work with the existing infrastructure and to provide new linkages to improve the overall bushfire outcome for both the site and the adjoining residential lands. These linkages, through the full extent of the applicants land ownership, will strengthen bush fire preparedness and response for surrounding homes; and will be discussed with the relevant fire authorities prior to any DA submission for subdivision to determine best use of resources.

Fire trail works if required will be undertaken in accordance with the design specifications outlined in *PBP 2006* and in accordance with construction standards set by the RFS and or Warringah-Pittwater Bushfire Management Committee.

### **Response: Paragraph 12 RFS Letter.**

These guidelines (as outlined in the FMP) include construction of fire trails with a minimum trafficable width of 4m with an additional 1m wide strip on each side of the road kept clear of bushes and long grass, a maximum grade of 15° (preferably 10°) and a minimum clearance of 4m to any overhanging obstructions, including tree branches.

These additional fire trails can be located within APZ and existing easement zones to ensure no detrimental impact on the environment. The voluntary planning agreement has been drafted to include for the provision of perimeter walking, running and mountain bike trails around the development area, all generally within the APZ areas. Similar to the existing Heath Fire Trail that is an operating RFS fire trail and is also promoted by Northern Beach Council as part of their mountain bike trail network, both on public and private land.

The boundaries of the SFAZ and LMZ have been designed as a response to terrain features. Boundaries include walking tracks fire trails and easements to ensure strategic planned burning can be undertaken in a safe way, as per the resent bush hazard reduction on the 4 & 5 March 2016.

### **SUMMARY**

In summary, the Planning Proposal is consistent with the objectives set out in the *s.117 Direction*, as well as the planning policy *Planning for Bush Fire Protection*.

The development on completion provides for the effective funding and ongoing management of APZ's and the surrounding strategic fire advantage zone all within the 134 hectare of land that is currently managed by RFS and National Parks.

The development on completion provides for compliance APZ area for the protection of persons, properties and safe evacuation paths.