

Our Ref: A16195B

Wednesday 8th March, 2017

Headquarters
15 Carter Street
LIDCOME NSW 2141



Attention: Lucy Donnelly

Dear Lucy,

**Re: Alternative solution options regarding access for the development at
Lot 5 DP 593628 & Lot 3 DP 1103503
46a & 46-66 O'Connell Street, Caddens**

Travers bushfire & ecology (TBE) has been engaged to provide a review of the development proposal (as lodged with Council in January 2017) in relation to the public road access design (width and parking provisions) and its compliance with the RFS policy document entitled *Planning for Bushfire Protection 2006 (PBP)*.

The roads, as proposed within the DA application, did not comply with the *acceptable solutions* outlined in PBP.

As a result *TBE* have worked together with *APP Corporation* and *Hill Thalys* to develop an alternative solution for access which aims to comply with the intent of measures and performance criteria outlined in PBP.

In summary the following changes to the design have been implemented to comply with the acceptable solutions of PBP.

- Lane way widths have been increased from 6m to 6.5m (B03 & B04);
- Lane way widths have been increased from 3.3 to 3.5m for one way roads (B01 & B02);
- Perimeter road widths have been increased from 6m to 8m (B03b);

The following changes to the design have been implemented to comply with the performance requirements of PBP.

- Two way passing (B06 & B07) streets have been increased from 3m to 5.5m;
- An additional emergency egress route has been provided for perimeter access to the woodland park;
- An additional emergency egress route has been provided to O'Connell Street in the west; and
- Parking bay widths retain a width of 2.3m.

As discussed briefly in a meeting with Jason Maslen (NSW RFS) at the Glendenning office on 10/2/2017 not all parts of the development site are identified as bushfire prone. Bushfire prone land is restricted to the existing vegetation to the west of O'Connell Street and to the proposed remnant woodland park within the southern portion of the site. The majority of the site is therefore not affected by bushfire prone vegetation (i.e. located over 100m from hazardous vegetation) and as a result firefighting access and its compliance with the *performance criteria* have been assessed in further detail.

The following figure identifies the overall road design and proposed ownership.

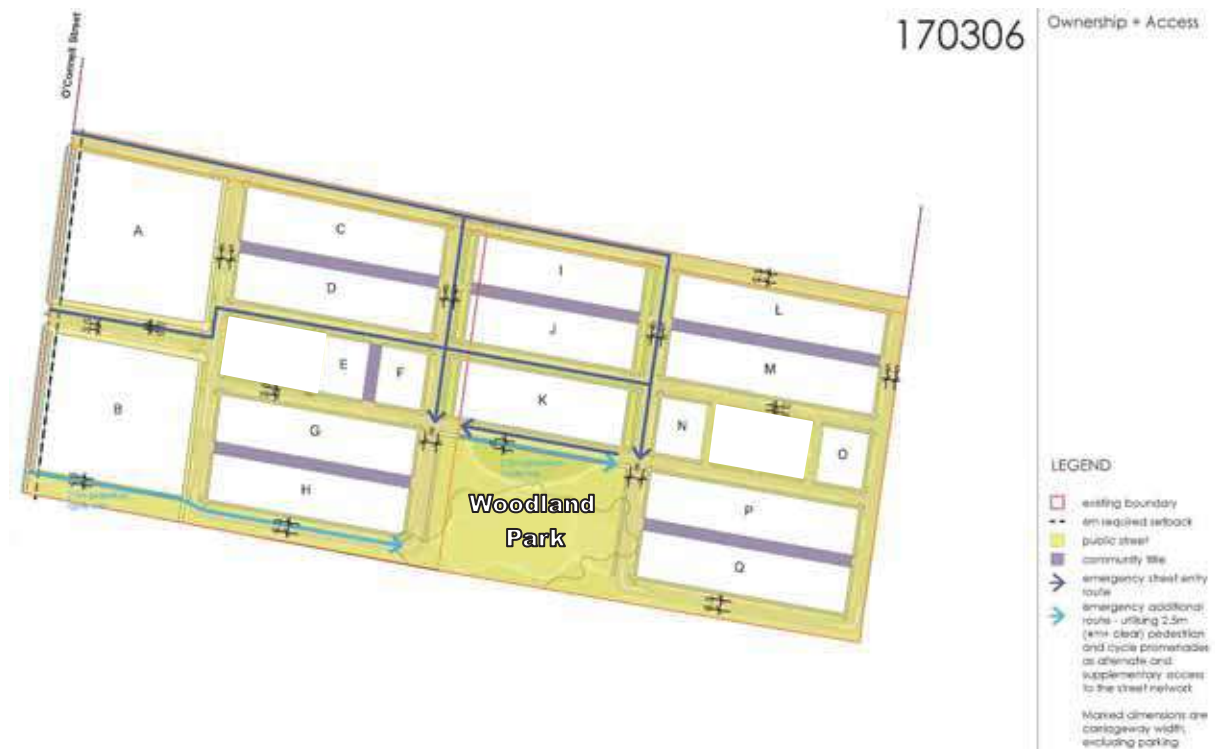


Figure 1 – Ownership and access design

Based on the location of the bushfire hazard and overall traffic flow there are a number of roads within the development which are considered ‘essential’ for firefighting operations and/or safe evacuation of residents. These roads are required to provide safe operational access for emergency services. These essential roads are identified in Schedule 1 (attached) and applies to all public streets (depicted yellow in Figure 1 above).

The design of the majority of these essential roads have been amended to comply with the acceptable solutions in terms of traffic lane widths.

The parking bays of 2.3m (as opposed to 2.5m as required under PBP) have been retained. This is considered acceptable as clear access will be provided to the reticulated water supply. The location of hydrants will be considered for the construction certificate and will be located outside of the parking bays to ensure accessibility to reticulated water for fire suppression.

Proposed ‘lanes’ are private access lanes and are held in community title ownership (marked purple in Figure 1). They retain their current proposed width of 4m (one-way).

The following provides further detail regarding the proposed road design changes for all ‘essential roads’ as it relates to Schedule 1 attached. The following road cross sections prepared by *Hill Thalys Architecture* depict road reserve widths, along with the carriageway, parking and verge widths (footpath or cycling path).

B01 – Main Street

As depicted in blue below this is a split single lane road originally provided with a 3.3m wide lane width.

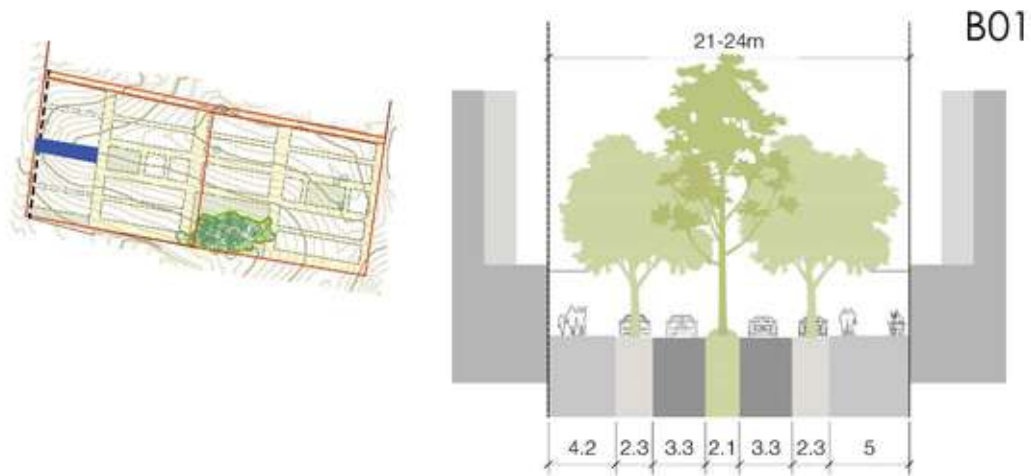


Figure BO1 (original DA) – Main Street

This road is considered an essential road and has been amended to provide a 3.5m lane width with a vertical clearance of 4m as required by PBP. Parking has been retained at 2.3m.

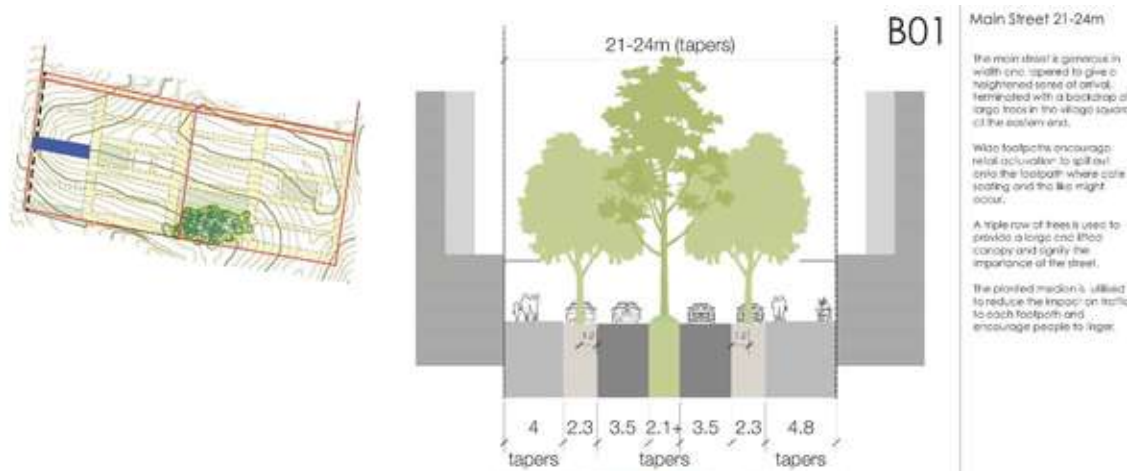


Figure BO1 (proposed change) – Main Street

B02 – Paired Street

As depicted in blue below this is a single lane road originally provided with a 3.5m wide lane width.

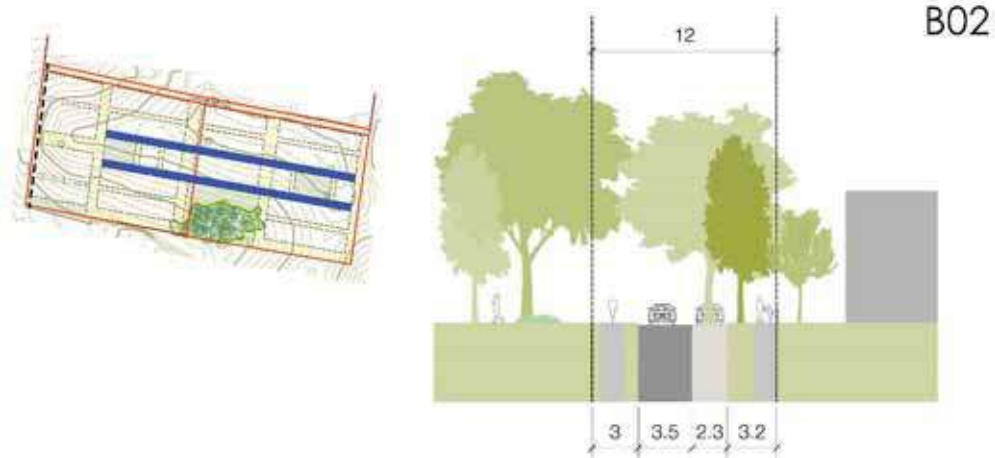


Figure B02 (original DA) – Paired Street

The portion of this road depicted in blue below (not considered a perimeter road) complies with the acceptable solutions of PBP and has therefore retained the 3.5m width.

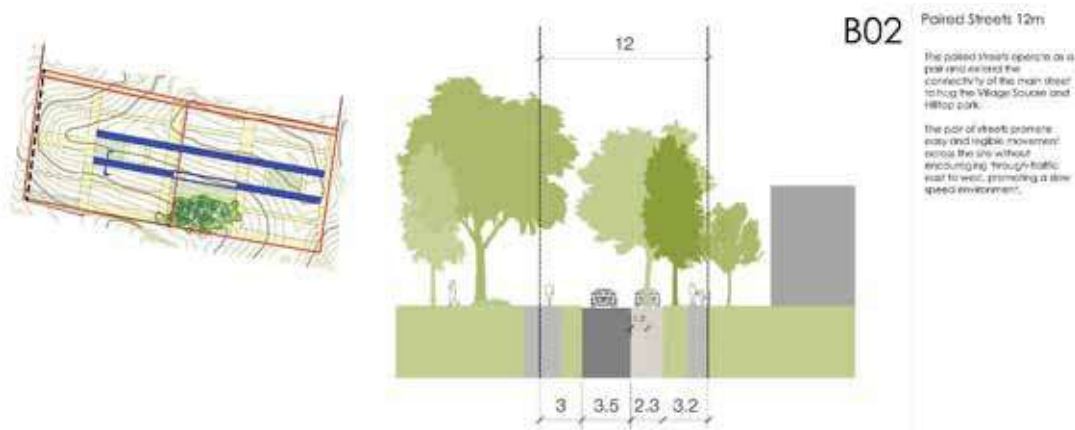


Figure B02 (proposed change) – Paired Street

The portion of road adjacent to the woodland park is considered a 'perimeter road'. This portion of road has been amended as per Figure B02b below.

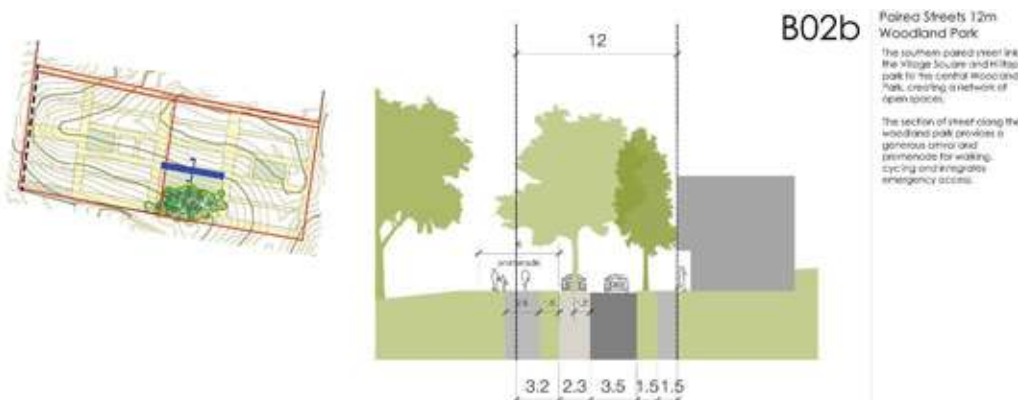


Figure B02b (proposed change) – Paired Street

Whilst the proposed road will retain its 3.5m one-way width for public access an additional emergency access route will be provided to the south (adjacent to the hazard) to run parallel with the woodland park. This emergency access route will include a 2.5m wide cycleway with a 1.5m wide grassland verge (designed to support a 15 tonne fire truck). This provides a total width of 4m. The strip park will provide additional sufficient clearance to allow fire fighter access and room to work around the vehicle in the unlikely event of a bushfire.

B03 – North-South Streets

As depicted in blue below this is a two way road originally provided with a 6m wide lane width.

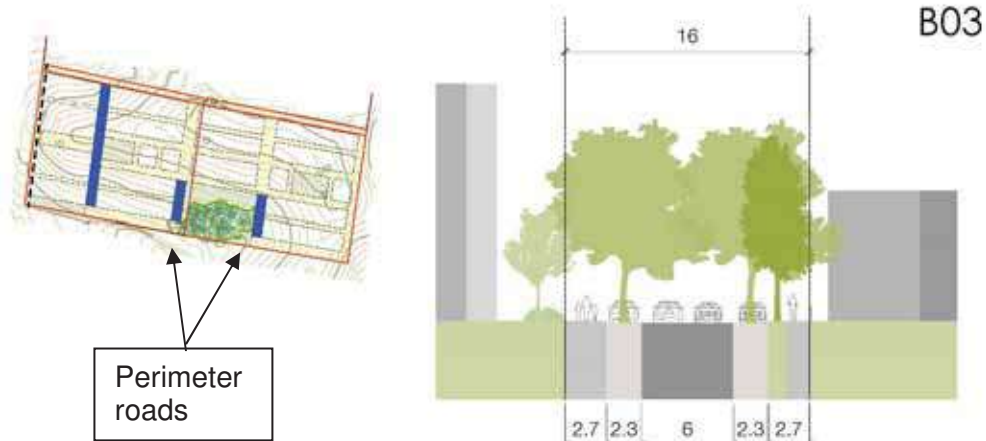
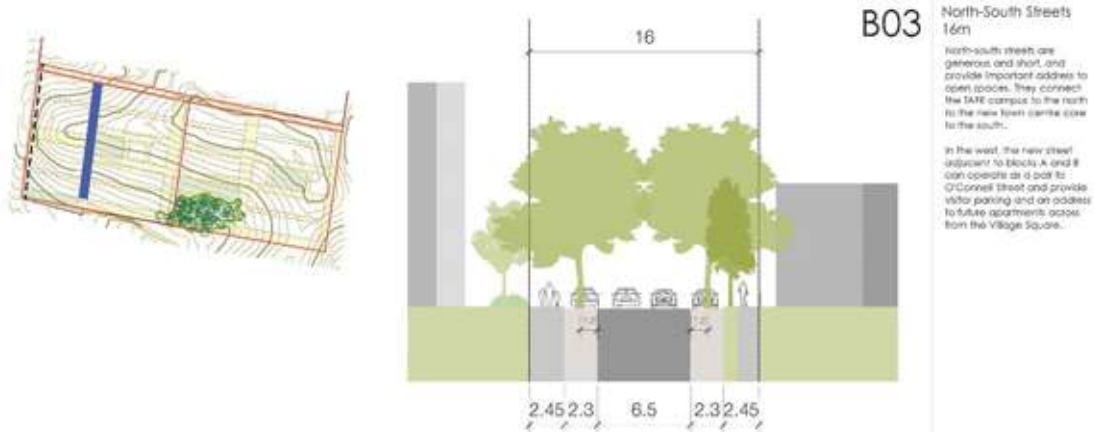


Figure B03 (original DA) – North-South Streets

The western road is considered an essential road and has been amended to provide a 6.5m width with a vertical clearance of 4m as required by PBP. Parking can be retained at 2.3m.



The two north-south perimeter roads (B03b) have been amended from 6m to 8m in compliance with the perimeter road requirements of PBP. The plans have been changed to ensure no parking on the hazard side of the roads with the services (hydrant) located on this side to ensure accessibility to reticulated water for fire suppression.

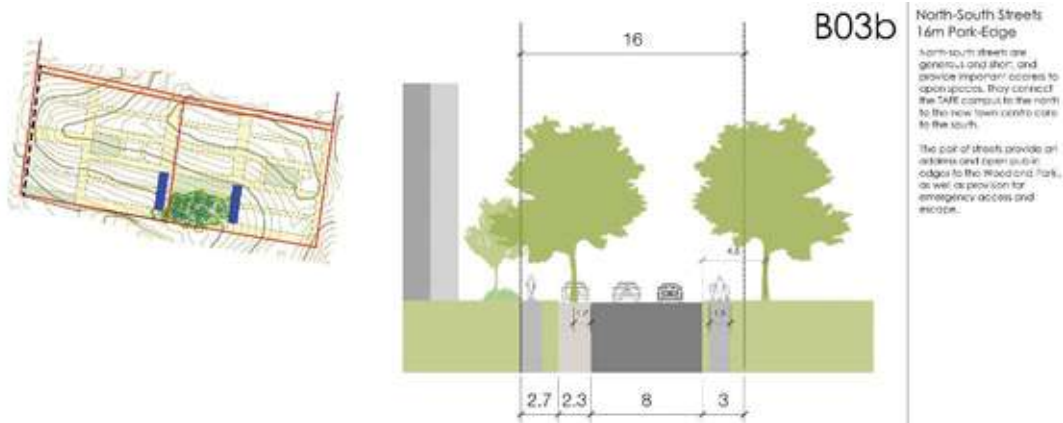


Figure B03 (proposed changes) – North-South Streets

B04 – North-South Streets

As depicted in blue below this is a two way road originally provided with a 6m wide lane width.

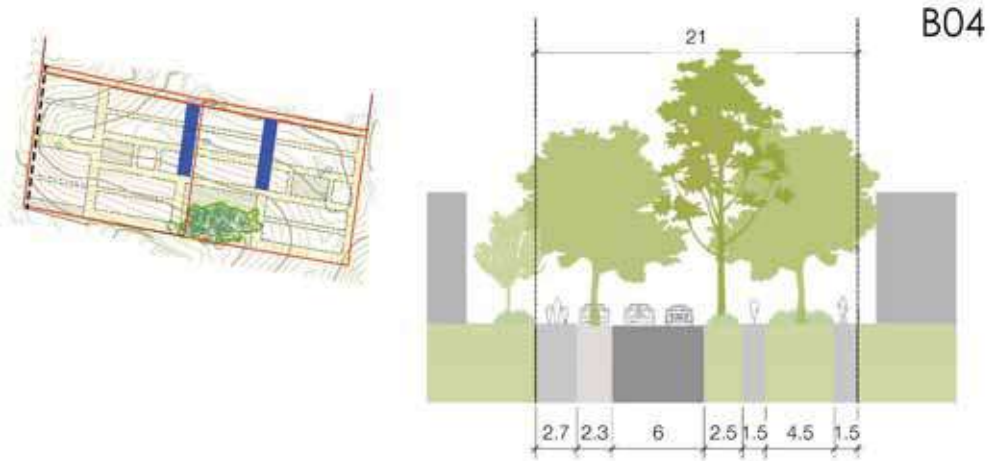


Figure B04 (original DA) – North-South Streets

These roads are considered essential roads. The entire road length has been amended to provide a 6.5m lane width in compliance with PBP. Parking is retained at 2.3m on one side only.

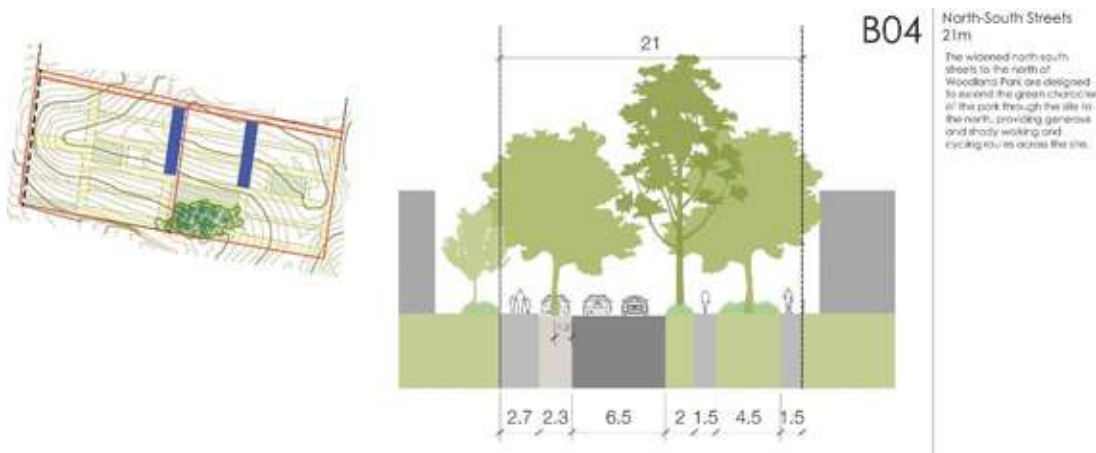


Figure B04 (proposed changes) – North-South Streets

B05 – South Edge Street

As depicted in blue below this is a two way road originally provided with a 6m wide lane width.

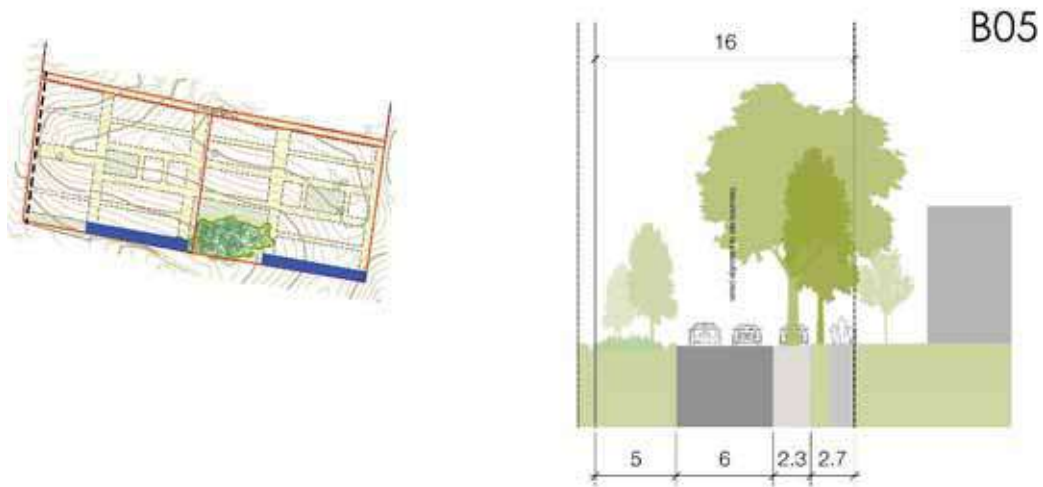


Figure BO5 (original DA) – South Edge Street

These roads are considered essential roads and have been amended to provide a 6.5m lane width in compliance with PBP. Parking is retained at 2.3m.

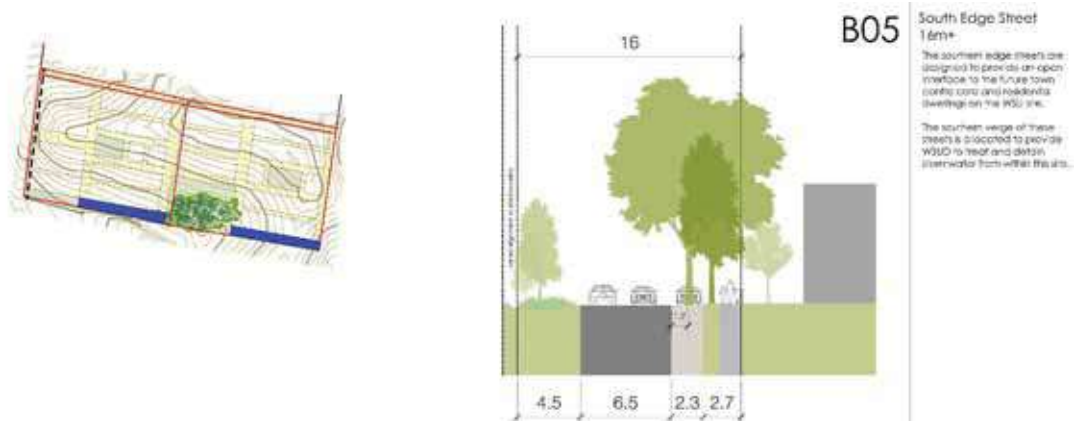


Figure BO5 (proposed changes) – South Edge Street

B06 – North Edge Street

As depicted in blue below this is a two way road originally provided with parking on each side. The design of the two way passing road was to allow cars travelling in opposite direction to pass each other in the outer 2.3m (i.e. $2.3 + 3m = 5.3m$). The outer 2.3m was also used for parking which would hinder passing opportunities.

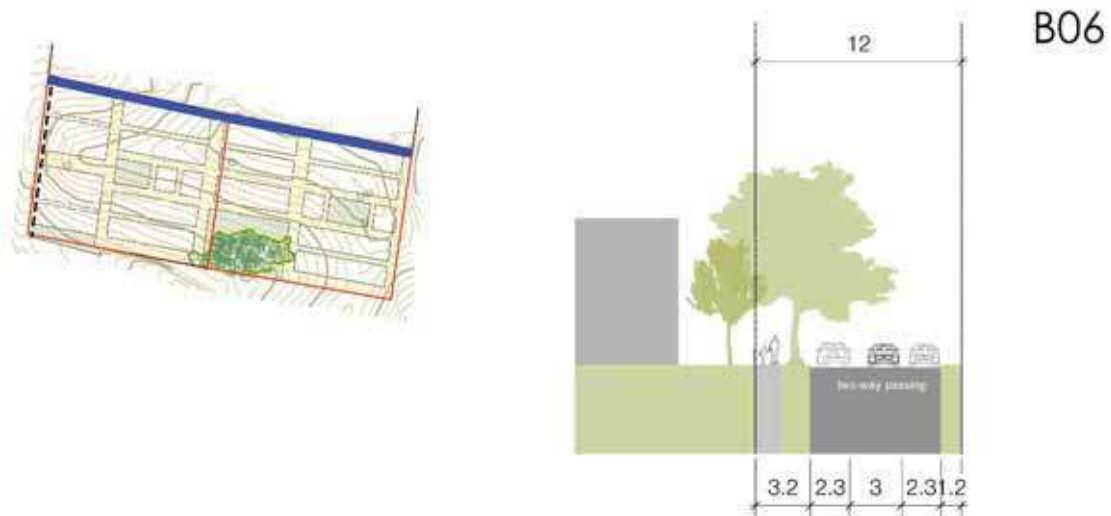


Figure B06 (original DA) – North Edge Street

The entire road length as depicted below has been amended to provide a 5.5m lane width plus parking on one side only.

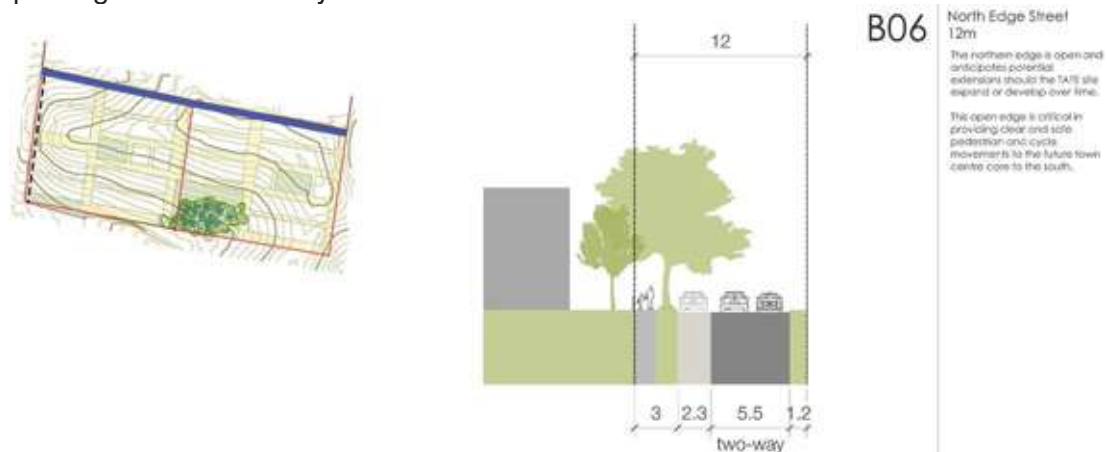


Figure B06 (proposed changes) – North Edge Street

This road does not comply with the acceptable solutions of PBP (i.e. 6.5m width). An alternative solution has been proposed based on the low bushfire risk. Road B06 for the most part, is located over 150m from bushfire prone vegetation. The bushfire affectation on this 5.5m road is considered negligible.

The radiant heat impact on this road is calculated at $1.65kW/m^2$ which is considered a very low threat category. As a result it is unlikely that fire fighting vehicles will need to utilise this northern road whilst residents are evacuating. Fire fighters will be provided with a further two (2) egress routes through the centre of the property or via the additional emergency access route in the south. It is unlikely that residents will need to evacuate from the northern portion of the site based on the very low bushfire risk. However it is recommended that roll top kerbs are provided on each side of B06 to allow a firetruck to readily mount the kerb and pass any obstructing vehicle on the road (although this is unlikely).

B07 – East Edge Street

As depicted in blue below this is a two way road originally provided with parking on each side (similar to B06 above). The design of the two way passing road was to allow cars travelling in opposite direction to pass each other in the outer 2.3m (i.e. $2.3 + 3m = 5.3m$). The outer 2.3m was also used for parking which would hinder passing opportunities.

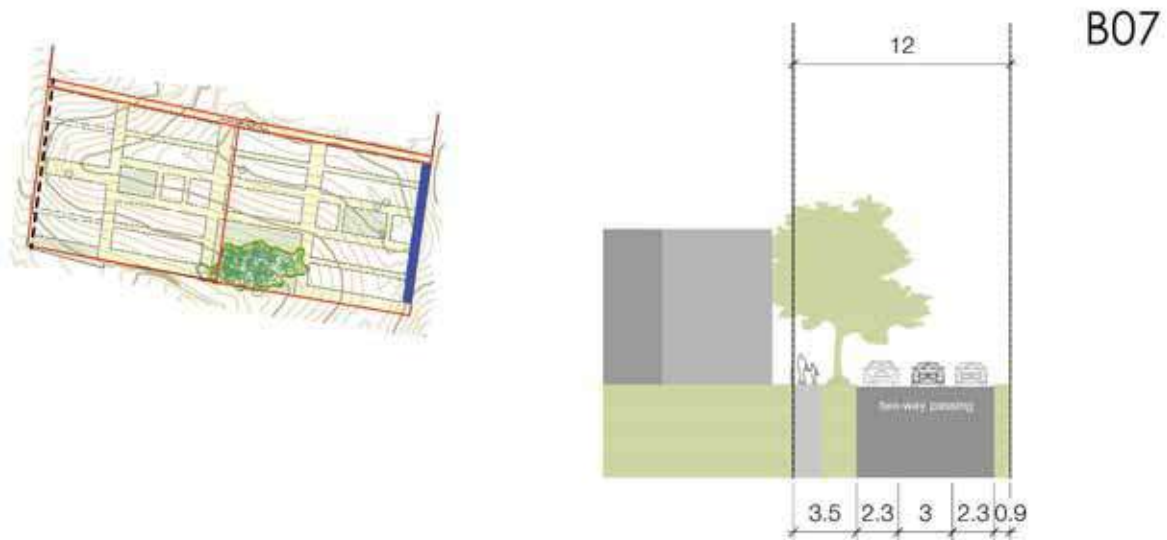


Figure B07 (original DA) – East Edge Street

As depicted in the figure below the entire road length has been amended to provide a 5.5m lane width plus parking on one side only.

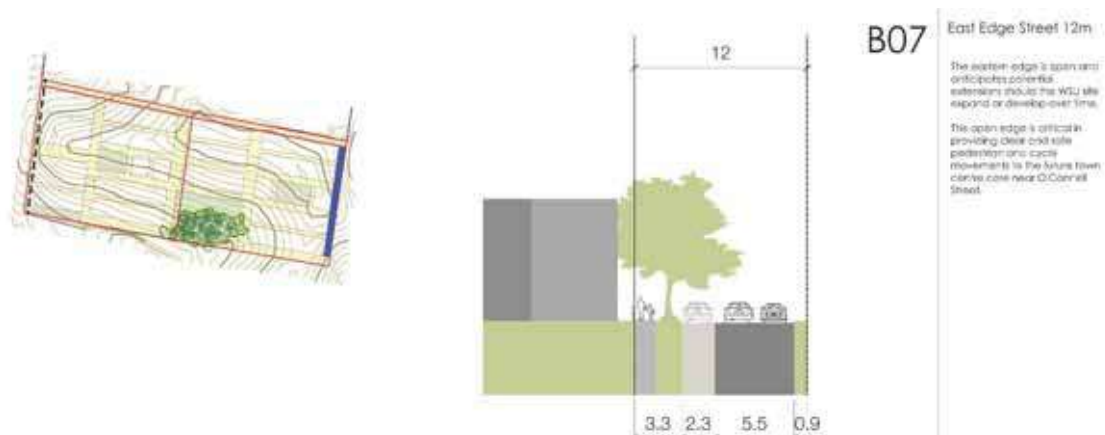


Figure B07 (proposed changes) – East Edge Street

As discussed above for road B06, road B07 is located over 150m from bushfire prone vegetation. The bushfire affectation on these 5.5m roads is considered negligible.

It is recommended that roll top kerbs are provided on each side of B07 to allow a firetruck to readily mount the kerb and pass any obstructing vehicle on the road (although this is unlikely).

Additional emergency egress / access route

As depicted in Figure 1 and Schedule 1 attached an additional emergency evacuation route has been provided at the southern boundary of the property to provide direct access to O'Connell Street. This route will be designed with a 4m wide clearway width. This will include a 2.5m wide pedestrian pathway with a 1.5m grassland verge designed to support a 15 tonne fire truck.

Conclusion

The adoption of the proposed changes to the concept plan will achieve compliance with the performance criteria for access as outlined in PBP.

Should you require further information or choose to utilise our services again, please do not hesitate to contact the undersigned on 4340 5331 or info@traverseecology.com.au.

Yours faithfully



John Travers

BA Sc. / Ass Dip / Grad Dip / BPAD-Level 3-15195 (FPA)

Managing Director – **Travers bushfire & ecology**



John Travers and Nicole van Dorst are BPAD consultants. Both are certified by the Fire Protection Association. FPA Australia administers the Bushfire Planning and Design (BPAD) Accreditation Scheme. The Scheme accredits consultants who offer bushfire assessment, planning, design and advice services. It accredits practitioners who meet criteria based on specific accreditation and competency requirements, including a detailed knowledge of the relevant planning, development and building legislation for each State and Territory. Through the Accreditation Scheme, BPAD Accredited Practitioners are recognised by industry, regulators, fire agencies, end-users and the community as providers of professional bushfire assessment, planning, design and advice services. The Scheme provides an enhanced level of confidence for government and the community that practitioners are accredited by a suitably robust scheme that is administered by the peak national body for fire safety. Note: L3 is the highest level and L1 is the lowest level.



PROJECT & MIXD REFERENCE
 46A & 46-66 O'Connell Street,
 Caddens
 A16195_BF002

DATE & ISSUE NUMBER
 8/03/2017
 Issue 1

SCALE & COORDINATE SYSTEM
 1:2,500 @A3
 GDA 1994 MGA Zone 56

TITLE
Schedule 1 - Access Roads

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.

0 50 100 m

- Legend**
- Lot boundary
 - Contours - 1m (source: LIDAR)
 - Vegetation management works (refer to VMP)**
 - Asset Protection Zone
 - Bushfire Construction Standards (AS3385) (2009)***
 - BAL 12.5
 - BAL 19
 - BAL 29
 - Cumberbund Plain Woodland regeneration (0.53ha)
 - Cumberbund Plain Woodland revegetation (0.16ha)
- Essential Roads for firefighting operation
- Additional emergency evacuation / route access
- * Please refer to additional construction requirements for BAL levels which are of *Planning for Bushfire Protection* (2008). Aerial source: Neatmap

Emergency access route for emergency services only. 4m wide to include pedestrian and cycle promanades and grassland verge capable of supporting a 15 tonne fire truck.

Emergency access route for emergency services only. 4m wide to include 2.5m cycleway and grassland verge of 2.5m capable of supporting a 15 tonne fire truck.