FEBRUARY 3, 2023

ST PETERS ANGLICAN COLLEGE
VEGETATION MANAGEMENT PLAN

61 TRAIN STREET, BROULEE NSW 2536

LGA: Eurobodalla

LOT 1 DP1037342

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VERSION CONTROL

Title	ST PETERS ANGLICAN COLLEGE VEGETATION MANAGEMENT PLAN			
Site address	61 TRAIN STREET, BROULEE NSW 2536			
Prepared By	Letara Judd BPAD L2 46804			
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[1.0]	LJ & KH	Final Report	25/01/2023	Complete

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1. INTRODUCTION

The Vegetation Management Plan (VMP) has been prepared by Harris Environmental on behalf of St Peters Anglican College at 61 Train Street Broulee. The site is within Eurobodalla Local Government Area, within the western residential area of Broulee as shown in Figure 1.

The VMP relates to the approved DA for the 'Alterations and additions to existing educational establishment' under DA0078/23 dated 16 November 2022 and the management of land for Asset Protection Zone (APZ) Purposes.

This VMP is provided in accordance with General Terms of Approval provided by NSW Rural Fire Service (NSWRFS) were provided on 26 October 2022 referenced DA20220817010049-Original-1. **Conditions 2 and 3** provide the approved APZs and distances on the site as follows:

2. From the commencement of building works and in perpetuity, the property around new buildings described in the above referenced report as P5, P7 and P10 must be maintained as an inner protection area to the following distances and aspects in accordance with the following requirements of Appendix 4 of *Planning for Bush Fire Protection 2019*:

- north for a minimum distance of 47 metres;
- east for a minimum distance of 38 metres;
- south for a minimum distance of 65 metres; and,
- west for a minimum distance of 65 metres.

3. From the commencement of building works and in perpetuity, the property around new buildings described in the above referenced report as P6 must be maintained as an inner protection area to the following distances and aspects in accordance with the following requirements of Appendix 4 of *Planning for Bush Fire Protection 2019*:

- north for a minimum distance of 21 metres;
- east for a minimum distance of 16 metres;
- south for a minimum distance of 65 metres; and,
- west for a minimum distance of 65 metres.

The area of VMP is shown in Figure 2.

The purpose of this VMP is to provide a guide for management of APZs.

FIGURE 1 SITE LOCATION

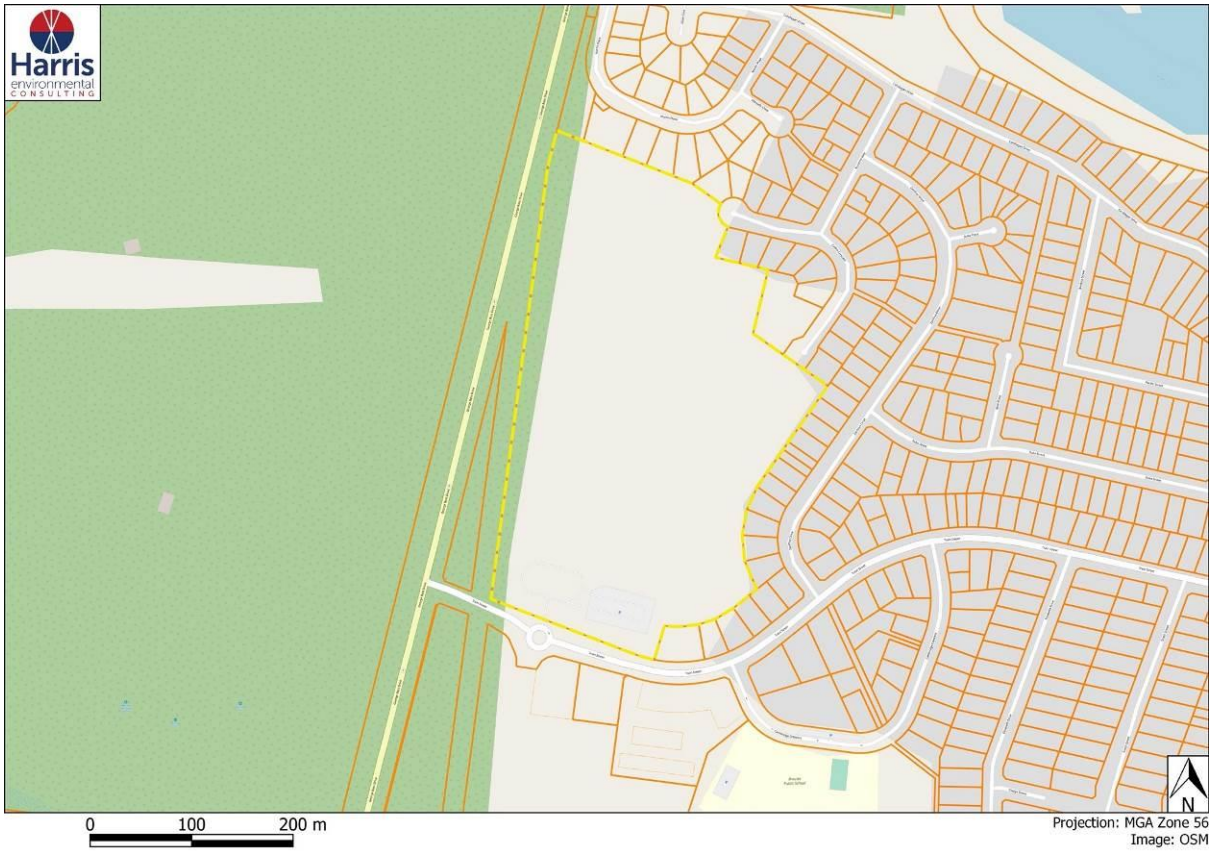


FIGURE 2 **VMP: ASSET PROTECTION ZONE SOUTH**

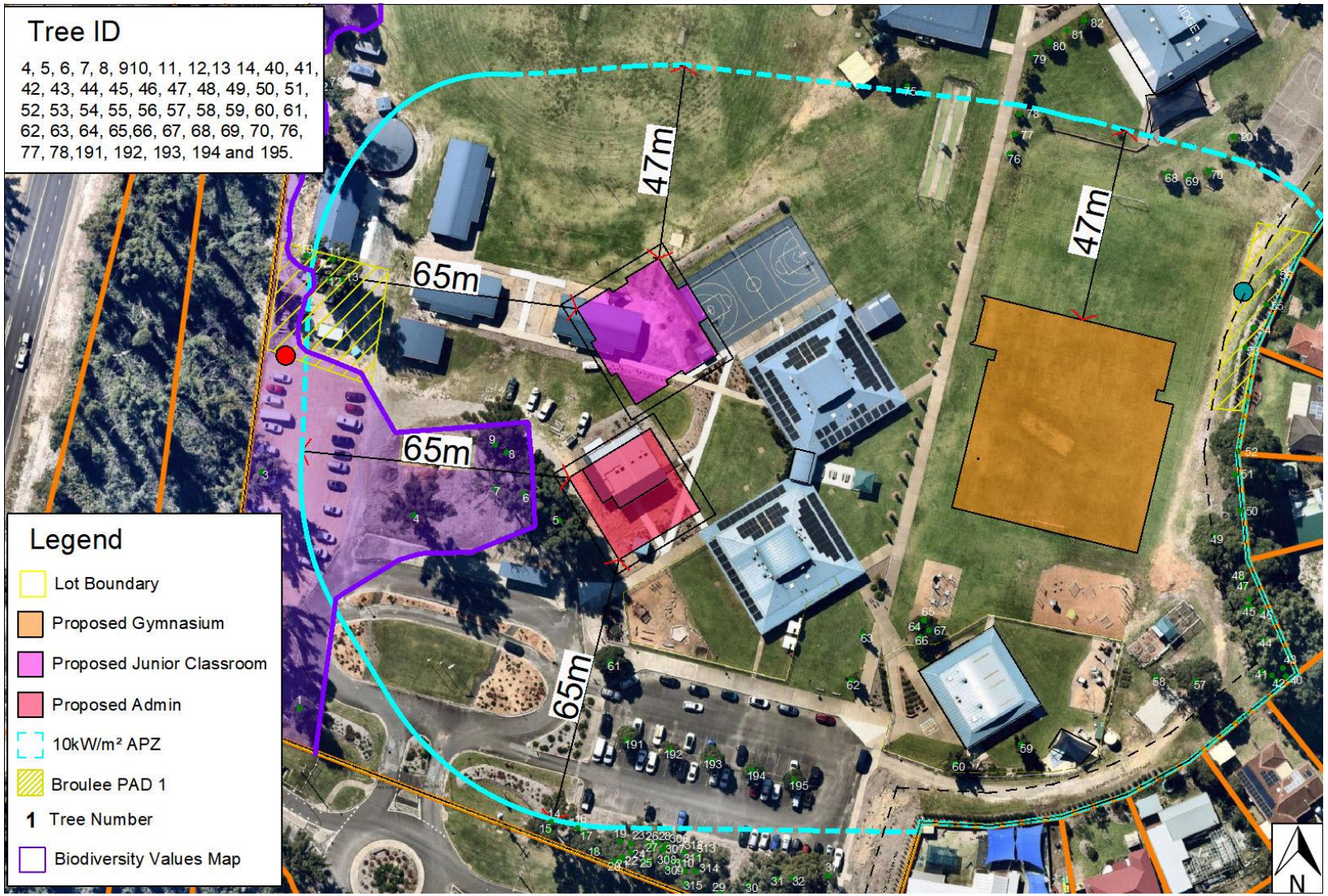
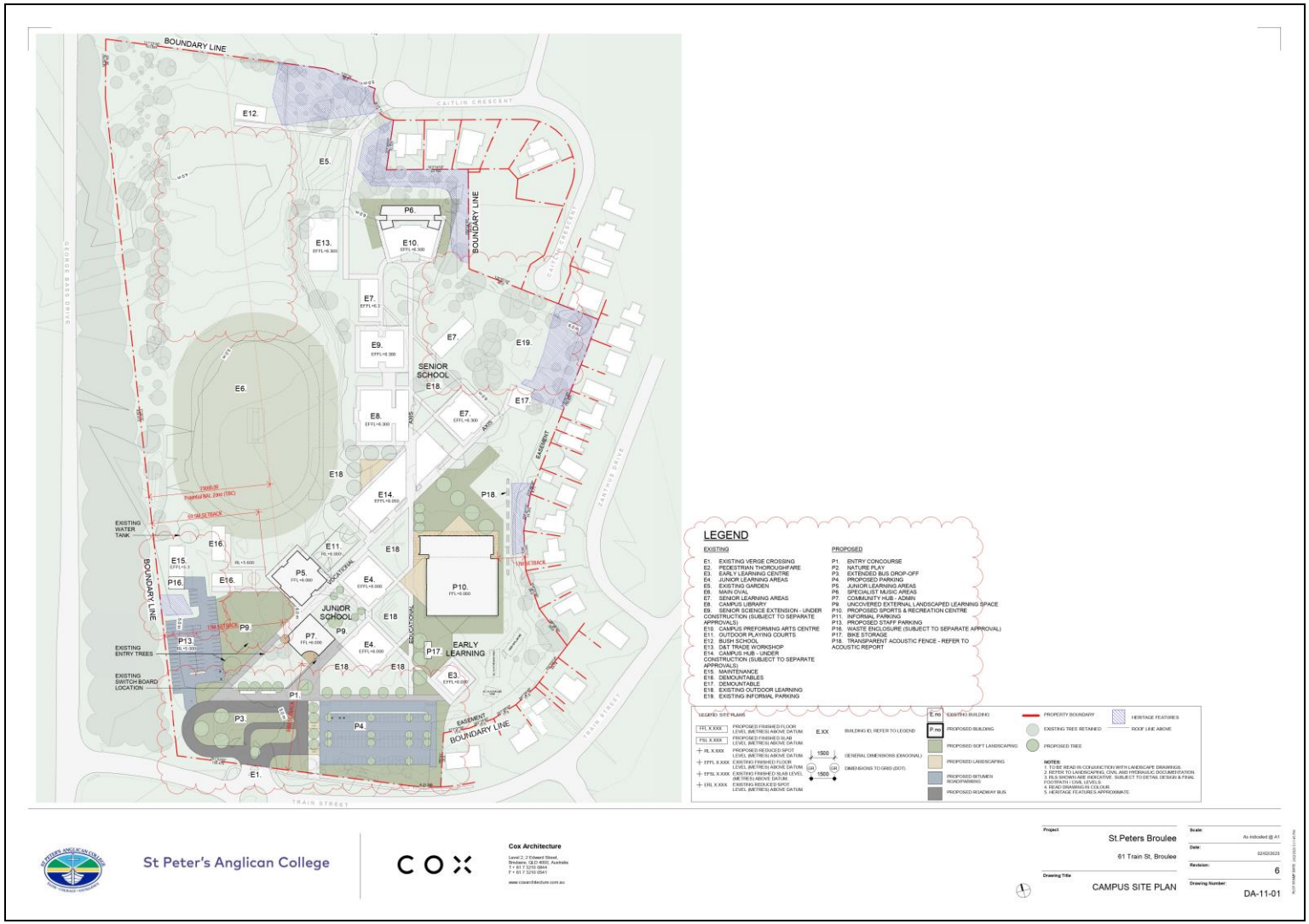


FIGURE 3 VMP: ASSET PROTECTION ZONE NORTH

FIGURE 4 DETAILED SITE PLAN



2. SITE DESCRIPTION

The APZs for the development include 2 areas across the school grounds for P5, P7 and P10 on the south of the site (Figure 2) and P6 on the north of the site (Figure 3).

These buildings include:

- P5. New Classroom - Junior learning areas.
- P6. Alterations and additions to the Campus Performing Arts Centre - Specialist music areas.
- P7. New administration and community hub building.
- P9. External learning area.
- P10. New sports & recreation centre.

The Biometric Vegetation Map (VIS_ID3900) identified the predominant vegetation community within 140 metres of the subject site to be Plant Community Type (PCT) 659 - Bangalay Sand Forest in the Sydney Basin and South East Corner Bioregions. This vegetation converts to South Coast Sand Dry Sclerophyll forest (Keith 2004) and is classified as a forest for the purpose of identifying Asset Protection Zones (APZ)

Photos 1-5 show the existing management of the site including the appearance of vegetation post 2019/2020 fire season impact from July 2022. It is expected this vegetation will grow back and this management plan is required to ensure the land is managed to APZ standards.

Photo 1 View APZ area on south of P5, P7 and P10

Photo 2 View APZ area on west of P5, P7 and P10

Photo 3 View APZ area on north of P6

Photo 4 View APZ area on north of P6

Photo 5 View APZ area on east of P6

3. OBJECTIVE AND SCOPE

The objective of this management plan is to establish and maintain the APZs. The maintenance is to be provided in accordance with Heritage objectives.

An APZ is a fuel-reduced area surrounding a building or structure. It is located between the building or structure and the bush fire hazard. By maintaining the APZ, the vegetation within the zone does not provide a path for the spread of fire to the building, either from the ground level or through the tree canopy.

An APZ provides:

- a buffer zone between a bush fire hazard and an asset;
- an area of reduced bush fire fuel that allows suppression of fire;
- an area from which backburning may be conducted; and
- an area which allows emergency services access and provides a relatively safe area for firefighters and home owners to defend their property.

The scope of this plan is to manage the vegetation within the APZ as an Inner Protection Area (IPA) for perpetuity.

Heritage objectives include:

- tree ‘removal’ as identified by this VMP, requires the tree trunk and root system to be retained. A 20-30 m truck is to be retained.

This plan has an operational life of 5 years and is a living document that should evolve as new knowledge or technologies emerge.

The Emergency Planning Committee should review this plan after the following:

- A major bushfire event;
- Changes to organisational responsibility;
- Changes to legislation.

4. APZ REQUIREMENTS

The APZs are to be maintained as Inner Protection Areas (IPA).

The IPA is the area closest to the building and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and act as a defendable space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 1cm in height and be discontinuous.

In practical terms the IPA is typically the curtilage around the building, consisting of a mown lawn and well maintained gardens.

When establishing and maintaining an IPA the following requirements apply:

Trees

- tree canopy cover should be less than 15% at maturity;
- trees at maturity should not touch or overhang the building;
- lower limbs should be removed up to a height of 2m above the ground;
- tree canopies should be separated by 2 to 5m; and
- preference should be given to smooth barked and evergreen trees.

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover; and
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

Grass

- grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
- leaves and vegetation debris should be removed.

As described in Table 1 and shown in Figures 2 and 3, the following trees are identified within the APZ.

It is recommended:

- All trees within the south APZ can be retained;
- All trees within north APZ are to be removed. All trees are to retain a truck of 20-30 cm to limit ground disturbance.

Broulee PAD 1 Specific Conditions:

- limit all vegetation removal to above-ground impacts;
- whipper snipping is permitted with a 100mm clearance from the ground;
- existing mown lawn buffer can be maintained.

TABLE 1 TREES WITHIN APZ

MAP	FIGURE	Tree ID
APZ South	Figure 2	4, 5, 6, 7, 8, 910, 11, 12,13 14, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65,66, 67, 68, 69, 70, 76, 77, 78,191, 192, 193, 194 and 195.
APZ North	Figure 3	86, 145, 146, 147, 148, 150, 151, 152, 153, 154, 155., 156, 157, 158, 159,160, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 175, 176, 178, 179, 180, 181, 182, 184, 185, 186, 187, 189 and 190

5. APPROVAL TO UNDERTAKE WORK

The development consent (DA0078/23) provides approval for the APZ and no further approval is required for undertaking APZ management work.

All work undertaken must be consistent with any existing land management agreements (e.g. a conservation agreement, or property vegetation plan) entered into by the property owner.

If you intend to burn off to reduce fuel levels on your property you may also need to obtain a Fire Permit through the RFS or NSW Fire Brigades. See the RFS document Before You Light That Fire for an explanation of when a permit is required.

6. HOW TO UNDERTAKE WORK

Reduction of fuel does not require removal of all vegetation, which would cause environmental damage.

Also, trees and plants can provide you with some bush fire protection from strong winds, intense heat and flying embers (by filtering embers) and changing wind patterns. Some ground cover is also needed to prevent soil erosion.

ESTABLISHMENT

Before the APZ can be maintained, it needs to be established to Inner Protection Area standards as detailed in Section 4. This may include vegetation removal of existing trees or shrubs prior to maintenance. This includes:

Trees

- trees at maturity should not touch or overhang the building;
- tree canopies should be separated by 2 to 5m; and

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover; and
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

When choosing plants for removal, the following basic rules should be followed:

- Remove noxious and environmental weeds first. Your local council can provide you with a list of environmental weeds or ‘undesirable species’. Alternatively, a list of noxious weeds can be obtained at www.agric.nsw.gov.au/ noxweed/;
- Remove more flammable species such as those with rough, flaky or stringy bark; and
- Remove or thin understorey plants, trees and shrubs less than three metres in height

The removal of significant native species should be avoided.

MAINTENANCE

To maintain the APZ work is to be undertaken by hand tools only (no mechanical tools). The following details the management methods details in *Standards for Asset Protection Zones (NSW RFS).* It is the duty of the person responsible for maintaining the APZ to use the most appropriate method for maintenance below.

By Hand Only:
This VMP identifies the area where work is to be undertaken by hand only in areas of sensitive heritage value.

Fuels can be controlled by hand by:

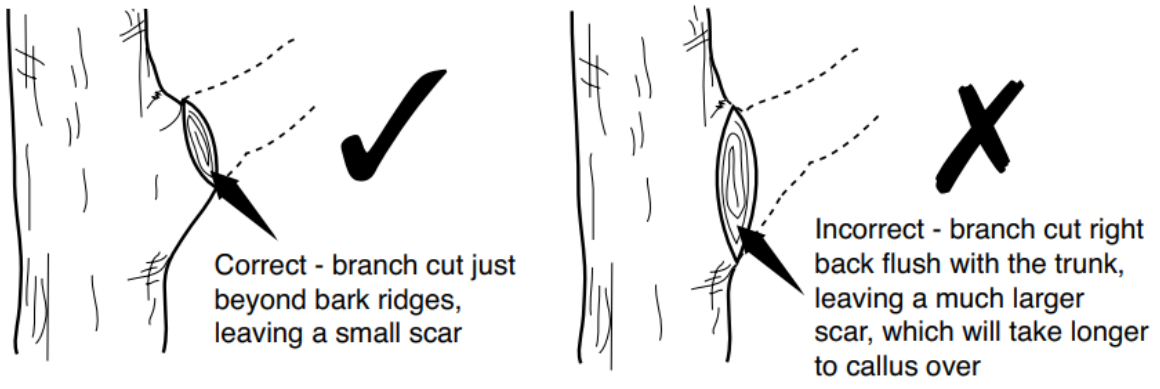
1. Raking or manual removal of fine fuels
   Ground fuels such as fallen leaves, twigs (less than 6 mm in diameter) and bark should be removed on a regular basis. This is fuel that burns quickly and increases the intensity of a fire. Fine fuels can be removed by hand or with tools such as rakes, hoes and shovels.

2. Mowing or grazing of grass by hand only.
   Grass needs to be kept short and, where possible, green.

3. Removal or pruning of trees, shrubs and understorey.
   The control of existing vegetation involves both selective fuel reduction (removal, thinning and pruning) and the retention of vegetation. Prune or remove trees so that you do not have a continuous tree canopy leading from the hazard to the asset. Separate tree crowns by two to five metres. A canopy should not overhang within two to five metres of a dwelling. Native trees and shrubs should be retained as clumps or islands and should maintain a covering of no more than 20% of the area.

Prune in accordance with the following standards:

- Use sharp tools. These will enable clean cuts and will minimise damage to the tree.
- Decide which branches are to be removed before commencing work. Ensure that you maintain a balanced, natural distribution of foliage and branches.
- Remove only what is necessary.
- Cut branches just beyond bark ridges, leaving a small scar.
- Remove smaller branches and deadwood first



There are three primary methods of pruning trees in APZs:

1. Crown lifting (skirting)
Remove the lowest branches (up to two metres from the ground). Crown lifting may inhibit the transfer of fire between the ground fuel and the tree canopy.
2. Thinning
Remove smaller secondary branches whilst retaining the main structural branches of the tree. Thinning may minimise the intensity of a fire.
3. Selective pruning
Remove branches that are specifically identified as creating a bush fire hazard (such as those overhanging assets or those which create a continuous tree canopy). Selective pruning can be used to prevent direct flame contact between trees and assets.

If clippings are removed, dispose of them in a green waste bin if available or compost on site (dumping clippings in the bush is illegal and it increases the bush fire hazard on your or your neighbour's property).

The following techniques can also assist in the implementation and maintenance of APZ:

- Biodegradable chemicals such as Roundup may be used on individual plants which are not endemic.
- Trees are to remain unaffected, except where the dead matter is hanging in the near-surface fuel area, i.e. branches less than 4 m;
- Any regrowth of shrubs to be culled.

7. LANDSCAPING CONSIDERATIONS

The following should be given consideration when maintenance occurs.

SOIL EROSION

While the removal of fuel is necessary to reduce a bush fire hazard, you also need to consider soil stability, particularly on sloping areas. Soil erosion can greatly reduce the quality of your land through:

- loss of top soil, nutrients, vegetation and seeds
- reduced soil structure, stability and quality
- blocking and polluting water courses and drainage lines

A small amount of ground cover can greatly improve soil stability and does not constitute a significant bush fire hazard. Ground cover includes any material which directly covers the soil surface such as vegetation, twigs, leaf litter, clippings or rocks. A permanent ground cover should be established (for example, short grass). This will provide an area that is easy to maintain and prevent soil erosion.

When using mechanical hazard reduction methods, you should retain a ground cover of at least 75% to prevent soil erosion. However, if your area is particularly susceptible to soil erosion, your Hazard Reduction Certificate may require than 90% ground cover be retained.

REMOVAL OF OTHER MATERIALS

Woodpiles, wooden sheds, combustible material, storage areas, large quantities of garden mulch, stacked flammable building materials etc. should be located away from the house. These items should preferably be located in a designated cleared location with no direct contact with bush fire hazard vegetation.

OTHER PROTECTIVE FEATURES

You can also take advantage of existing or proposed protective features such as fire trails, gravel paths, rows of trees, dams, creeks, swimming pools, tennis courts and vegetable gardens as part of the property's APZ.

TABLE 2 FREQUENCY OF MAINTENANCE WORKS

Activity	Minimum Frequency	Description of Activity	Responsibility
Creation of APZ	Competed prior to the commencement of building works	As per plan	Site Manager
APZ Maintenance	**Trees and Shrubs:** Quarterly **Grass:** Fortnightly	As per plan	Site Manager
New plan	Every 5 years	Overall coordination and review of this plan. A review should also occur following: • A major bushfire event; • Changes to organisational responsibility; • Changes to legislation.	Site Manager

8. REFERENCES

Keith, D. (2004). "*Ocean Shores to Desert Dunes*" Department of Environment and Conservation, Sydney

NSW Office of Environment & Heritage (2013) *Compilation map: Biometric vegetation types and endangered ecological communities of the Shoalhaven, Eurobodalla & Bega Valley local government areas. A living map*. Version 2.0. Technical Report. NSW Office of Environment & Heritage, Queanbeyan.

NSW Rural Fire Service (2019). *Planning for Bushfire Protection. A Guide for Councils, Planners, Fire Authorities and Developers*. *November 2019*

NSW Rural Fire Service (2010) *Standards for asset protection zones*

Tozer MG, Turner K, Keith DA, Tindall D, Pennay C, Simpson C, MacKenzie B, Beukers P, Cox S (2010). *Native Vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands*. Cunninghania 11:359-406.

9. DEFINITIONS

Asset Protection Zone- A fuel reduced area surrounding a buffer zone between a bushfire hazard and an asset. The APZ includes a defendable space within which firefighting operations can be carried out. The size of the required APZ varies with slope, vegetation and FFDI.

Bush fire prone area- an area of land that can support a bush fire or is likely to be subject to bushfire attack, as designated on a bush fir prone land map

Bush fire prone vegetation (BFPV) – A map prepared by Council in accordance with RFS guidelines and defining area of vegetation by BFPV categories

Bushfire prone land map (BFPL) A map prepared in accordance with RFS guidelines and certified by the Commissioner of the NSW RSS under section 146 (2) of the Environmental Planning and Assessment Act (1979)

Crown /Canopy Fire: Fast burning fire in the crowns of the tree

Effective Slope: The land beneath the vegetation which most significantly effects fire behavior, having regard to the vegetation present.

Fine Fuels: All fuels less than 6 mm in diameter

Fire Intensity - The rate of energy released per unit length of fire front

Fire Season- The periods of the year during which fires are likely to occur. There is an official fire season that is determined each year by the RFS

Fuel: Any material such as grass, bark, leaf litter and living vegetation which can be ignited and sustains fire. Fuel is measured in tonnes per hectare of dry weight

Managed land- Managed land is land that has vegetation removed or maintained to limit the spread and impact of bushfire. It may include existing developed land (i.e. residential, commercial or industrial) roads, golf course fairways, playgrounds or sports fields, vineyards, orchards, cultivated ornamental gardens, and commercial nurseries.

PCT Maps- *Plant Community Types* are the agreed foundation level for classifying vegetation in NSW and are intended to provide the most ecologically relevant grouping of plant species for a range of purposes not just mapping. Plant communities are complex and dynamic entities that can be challenging to map or even recognize on the ground especially where they have been significantly modified through clearing or logging.

VMP- Vegetation Management Plan outlines the objectives, techniques and actions specific to the management of the vegetation on site.