

BUSHFIRE MANAGEMENT STRATEGY

Mount Lofty Golf Estate
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Mount Lofty Golf Estate Bushfire Management Strategy

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Bushfire Management Strategy

INTRODUCTION

This document has been prepared to set the guidelines for the processes and procedures in the preparation for bushfires, particular responses and the actions required in the recovery following any bushfire event.

The Management Strategy (Plan) is a fluid document and must be reviewed on a regular basis and amended / upgraded as necessary, particularly prior to any bushfire season.

During significant bushfires, there will be conflicting demands on fire brigade resources and reliance should not be placed on fire brigade intervention to protect any specific property. It should therefore be assumed that there will be no fire brigade intervention with respect to protecting a specific property, and it is therefore the duty and responsibility for the Estate to be fully committed to providing the resources and appropriate actions in their duty of care to prepare for, prevent, mitigate, respond to, and support recovery from bushfire. There can be no absolute guarantee that the safety of all guests, staff and associated persons from bushfire.

All bushfires are different. Bushfires are complex and dynamic events. Safe responses will always depend on specific circumstances, so there is a need to plan for a variety of situations.

Bushfire safety depends on people having access to a range of safety options. All options other than being out of the fire area involve varying degrees of danger. Not all options will afford the same degree of protection from a bushfire

Bushfire safety involves effective planning and preparation prior to a fire, making informed decisions during the event, and having access to a range of safety options, in particular places to shelter from the effects of the fire.

Many of the actions required by this Management Plan are encompassed within the *Bushfire Survival Plan* for the Estate. This is a separate stand-alone document that should be read, referenced, and taken as an integral part of this Management Strategy.

OBJECTIVES

The objectives of this Management Strategy ('Plan') is to provide the detail necessary for the framework of measures to be considered.

The principal object of the Plan is to ensure such measures are taken towards the protection of human life, be it persons associated with a facility or the fire-fighting personnel that will attend during and following any bushfire event.

Bushfire management comprises three planks: *preparation, response and recovery*.

Preparation involves managing fuel loads and vegetation, maintaining access to tracks and fire breaks, planning fire response and ensuring sufficient human capacity and resources to respond to worst-case scenarios

Activities undertaken in advance of the occurrence of an incident decreases the impact, extent and severity of the incident and to ensure more effective response activities. Arrangements to ensure that, should an event occur, all those resources and services which are needed to cope with the effects can be efficiently mobilised and deployed.

Measures are to be taken to ensure that resources and services are capable of coping with the effects.

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Response encompasses actions taken in anticipation of, during, and immediately after an event to ensure that its effects are minimised, and that people affected are given immediate relief and support.

Recovery is the restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities affected, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk.

ROLES and RESPONSIBILITIES

Emergency Planning Committee

The first step is to establish an Emergency Planning Committee (EPC) if one has not yet been established. An EPC is most likely convened as an integral part of the management of the Estate.

The EPC is a consultative group made up of a representation of those who may work, live or otherwise are occupants at the premises. The group normally consists of senior management, tenants, staff, chief and deputy chief wardens.

The role of the EPC is to actively participate in the planning process and identifies the roles and likely participants who will be responsible for the implementation of the plan and its procedures during an emergency.

The role of the EPC is to:

- Establish and implement emergency plans and procedures;
- Identify duties and responsibilities of positions;
- Formulate emergency procedures;
- Educate & train employees and other occupants;
- Make all occupants aware of the emergency procedures for the development; and
- Conduct an annual exercise of emergency procedures for the development prior to the Bushfire Season.

Roles and responsibilities are required to be assigned to staff such as:

- Co-ordination and arranging transport;
- Physically relocating occupants from one place to another;
- Ensuring all buildings are properly secured to limit the impact of a bushfire;
- Initiating any bushfire protection measures such as sprinkler systems; and
- Liaising with emergency services.

REFERENCE : refer to the Bushfire Survival Plan

Examples of Roles and Responsibilities

Chief Warden

The Chief Warden is the person who is responsible for coordinating the emergency procedures and may also include:

- Managing and overseeing of any emergency procedures;

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- Arranging training of employees in emergency procedure;
- Reviewing the effectiveness of emergency procedure exercises and arrange for procedure improvements; and
- Accounting for all persons during the emergency procedures.

Wardens / Employees

The wardens/employees are responsible for;

- Maintaining a calm atmosphere among the occupants;
- Following established procedures;
- Following the direction of the Chief Warden;
- Assisting with moving of occupants; and
- May be required to act as Chief Warden.

Note: The number of Wardens is dependent on the number of discrete business units, areas or buildings within which occupants may need to be supported during a bushfire event, including the possibility of evacuation.

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FIRE FIGHTING PROVISIONS

[DETAILS TO BE ADDED FOLLOWING DESIGN AND DOCUMENTATION]

MITIGATING THE BUSHFIRE RISK

Vegetation Management

Fire Management Zones are to be established and maintained in order to control the fuel loading created by the varying vegetation types.

The topography of the site and the large areas of native vegetation leads to the increased reliance of vegetation management to protect native vegetation in addition to retention of radiant heat that may be impinged on the assets (Bushfire Attack Level).

Appendix A provides a description of the types of vegetation management zones and there intended application.

Figure A1 in Appendix A indicates the planned areas of management and details the maximum levels of fuel loads that need to maintained.

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ASSET MANAGEMENT and RECORDS

As a facility located within a High Bushfire Prone area, there are minimum requirements set for materials used and construction methods adopted for the Estate in compliance with Australian Standard AS 3959 – 2018 *Construction of buildings in bushfire prone areas*

The details of construction including approved 'as constructed' documentation will be assembled within a manual for ongoing reference throughout the life of the facility, including critical advice for any subsequent owners and occupiers.

It is a part of this Bushfire Management Strategy that these records identifying the construction details as baseline data be maintained, with this Bushfire Maintenance Strategy and the associated Bushfire Survival Plan, included with copies maintained at the property.

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APPENDIX A

VEGETATION MANAGEMENT

FIRE MANAGEMENT ZONES

Fire Management Zones (FMZ) provide a coordinated and consistent approach to bushfire risk mitigation and land management, and support the relevant fire and land manager/s by defining the minimum requirements an area must meet to comply with the relevant FMZ category. FMZs also determine the type of treatment activities that are permissible.

Where significant risks, either from bushfire or inappropriate fire regimes, are identified in an approved fire management plan, FMZs may be applied as a strategy to identify where fire management activities are considered a priority to mitigate the identified risk/s.

Fire Management Zones comprise the following categories:

- Asset Protection Zone (A-zone)
- Bushfire Buffer Zone (B-zone)
- Strategic Fuel Management Zone (S-zone)
- Conservation Zones (C-zones)
- Exclusion Zones (X-zone)

If fire management activities occur in areas that are not zoned the land manager must conduct the activities in accordance with the principles and regulation of the *Fire and Emergency Services Act 2005* (FES Act), and the *Native Vegetation Act 1991* (NV Act), and the Ecological Fire Management Guidelines (EFMG).

ASSET PROTECTION ZONE

Definition

An A-zone is an actively managed fuel reduced area that surrounds or is adjacent to assets for the purpose of minimising risks to life, property, and environmental assets, particularly aimed at stopping the spread of fire and preventing direct flame contact, intense radiant heat, and reducing short distance ember attack from the immediate environment.

The distance from the asset and the width has been determined by the Australian Standard 3959.

Fine fuel levels in the A-zone shall be maintained to keep surface and shrub level fine fuels at Moderate or lower (as an average across the zone) as defined in the Department for Environment and Water's *Overall Fuel Hazard Guide for South Australia*.

A-zones can include the 20 m Native Vegetation Council defendable space around dwellings⁶. A-zones can extend beyond this width, when identified in an approved fire management plan:

- to protect multiple dwellings, settlements, larger civil infrastructure, major road corridors, and defined environmental assets
- where slopes occur downhill from the asset or where vegetation types have High fuel levels (refer to AS3959 2018)

An A-zone may similarly be less than 20 m where the ground slopes uphill from assets or where vegetation fuel levels are low.

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Managing Asset Protection Zones

A-zones should be maintained so that the overall fuel hazard (as an average throughout the zone) does not exceed Moderate.

- Dry grass in an A-zone should be maintained at 10 cm or less.
- A-zone incorporate existing cleared areas, roads, paths, fairways and tees which already have low fuel levels, rather than clearing further land. ,

Asset Protection Zone Vegetation management

Available fine fuels (fuel particles less than 6 mm in diameter – such as leaves, twigs, and small sticks up to pencil size) within an A-zone are to be reduced and maintained so that:

- fine fuel levels close to the asset are significantly lowered to reduce fire intensity and flame contact with assets
- fine fuel levels in surface, shrub, and canopy are significantly reduced and continuity (spread across the area) interrupted.

Note that mature trees are not fine fuel. Loose bark and dead leaf litter from mature trees are included in fine fuel assessment.

Fuel levels should be modified and maintained to keep the zone at Moderate or lower overall fuel hazard levels for the duration of the fire danger season. This may be achieved by utilising the methods identified below. Appropriateness of individual actions is dependent on land use and vegetation type.

Tree canopies within the A-zone should be separated by at least 2 m ⁸. Keep the lower branches on mature trees pruned to a minimum of 2 m above the ground.

- Manage understorey plants in the A-zone so that the leaf area of the vegetation is not vertically or horizontally continuous. A disconnected 'clumping' of shrubs is more desirable than even connected coverage. Separate shrubs and trees to minimise vertical fuel 'ladders'.
- Dead shrubs/understorey plants within the A-zone should be removed.
- Grasses within the A-zone should be reduced to an average height of 10 cm.
- No heath or shrub understorey species are to be within 2 m of the asset to be protected.
- Vegetation clearance can be undertaken within 20 m of an approved dwelling (apart from large trees with a trunk circumference of 2 m or greater (measured 1m from the base of the tree) (NV Act).
- Where the asset is a building, tree branches overhanging the roof should be removed or trimmed to at least 2m clear of the roof.
- Where approved, prescribed burning can achieve the desired fuel reduction outcome
- Fine fuel levels in the A-zone should be maintained to keep surface and shrub level fine fuels at Moderate or lower (as an average across the zone) as defined in the *Overall Fuel Hazard Guide for South Australia*.

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BUFFER ZONES

Definition

A B-zone is an area maintained to not exceed High overall fuel hazard levels (as an average throughout the zone) aimed at minimising risks by slowing the fire's rate of spread, reducing its intensity, and minimising fire spotting potential over short to medium distances.

Purpose of Bushfire Buffer Zones

A B-zone may be created beyond an A-zone to provide additional fuel management to reduce the risk of bushfire and is often best utilised to complement an A-zone around a significant asset or settlement. However, it is not intended that B-zones will be created for single dwellings in rural areas.

- A B-zone is designed to:
 - reduce fire spread, intensity, and short-medium distance spotting
 - increase the area of reduced fire behaviour near significant assets
 - provide an area of potential advantage for firefighters to suppress a larger bushfire
 - reduce the impact of bushfire burning a whole large block of native vegetation or several adjacent smaller areas of native vegetation
 - reduce the potential for a bushfire to burn out of vegetated land into surrounding land.

Managing Bushfire Buffer Zones

B-zones should be maintained to ensure that the overall fuel hazard does not exceed High (as an average throughout the zone).

Specification for Bushfire Buffer Zones

General design principles of Bushfire Buffer Zones

- B-zones may complement an A-zone, where necessary or to replace an A-zone where keeping fuel levels below High is sufficient to protect the asset and may result in a lower environmental impact.
- The location of a B-zone should incorporate existing fuel reduced areas such as cleared areas, roads, golf courses, and ovals where available.
- A B-zone should be wide enough that a majority of short-medium distance spotting will not occur beyond the zone. Recommended zone width is:
 - Grassland – up to 20 m
 - Grassland with scattered trees – up to 20 m or 2x tree height (whichever is greater)
 - Heathland/Coastal Scrub/Shrubland – up to 100 m
 - Mallee – up to 1000 m
 - Forest/Woodland (no stringybark trees present) – up to 500 m
 - Forest/Woodland (stringybark trees present) – up to 1000 m
- The width of a B-zone can vary between 20 m and 1000 m depending on the vegetation type, fuel hazard levels, expected fire behaviour, and available control lines. Other factors influencing width may include topography (aspect and slope), the size and extent of native vegetation and environmental assets, known or expected fire paths or fire behaviour, and the level of risk to assets (including human settlement, cultural, or biodiversity).

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Bushfire Buffer Zone Vegetation management

Fuel levels within a B-zone are to be managed so that:

- overall fuel hazard does not exceed High (as an average throughout the zone)
- potential spotting and fire intensity in the zone is reduced to provide a suppression advantage to assist in containing bushfires within defined areas
- spotting, fire intensity, and spread in the zone is reduced for safer access for firefighters
- spotting, fire intensity, and spread in the zone is reduced to provide strategic fuel reduction for a landscape, reserve, or large vegetation block
- by implementing B-zones, a range of activities could achieve the required fuel reduction, including but not limited to, prescribed burning, targeted woody weed control, selective thinning, or mechanical treatment. The selection of treatment method will be influenced by the effectiveness of the technique, the environmental impact of the activity, and cost of the operation.

(SITE PLAN WITH FIRE MANAGEMENT ZONES IDENTIFIED TO BE INSERTED)

FIGURE A1 – FIRE MANAGEMENT ZONES

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APPENDIX B

FIRE FIGHTING PROVISIONS

Fire Water Storage

[DETAILS TO BE ADDED FOLLOWING DESIGN AND DOCUMENTATION]

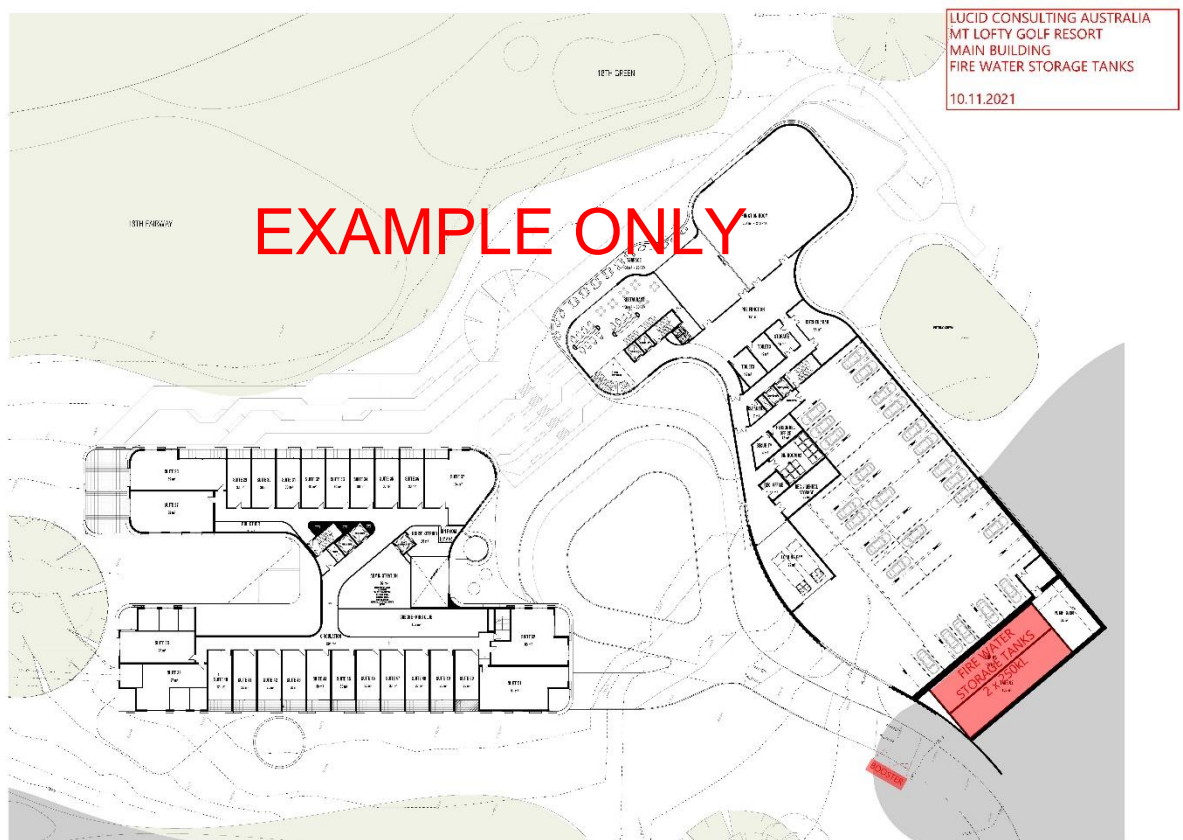


FIGURE B1 – FIRE WATER STORAGE

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Fire -fighter External Hosereels

External hosereels are provided at strategic locations in accommodation areas for the prime use of bushfire fighters. Hosereels are located that they can be used for pre-wetting vegetation prior to arrival of any fire front, and for post-fire use in clean-up, extinction of spot fires, and ongoing extinction of flareups in the days following the fire.

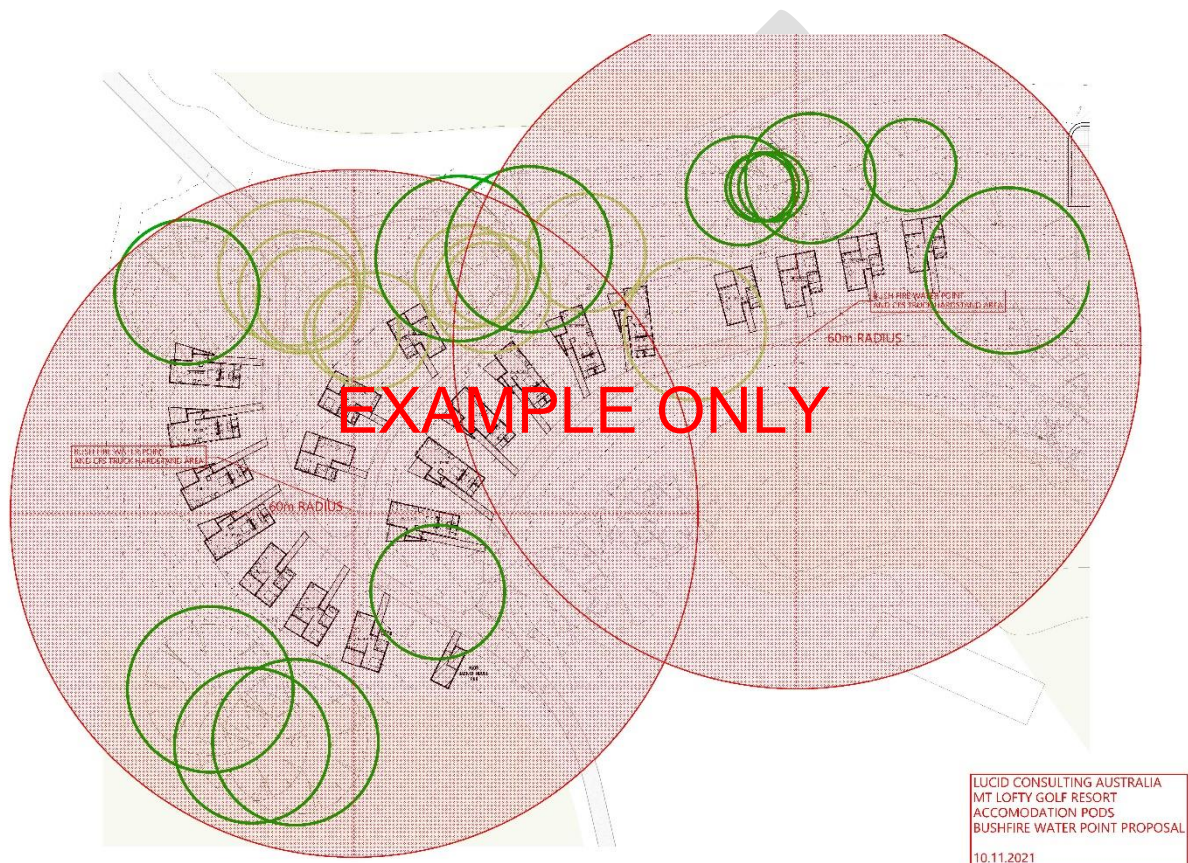


FIGURE B2 – BUSHFIRE FIRE-FIGHTING PROVISIONS AT PODS

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FIRE EQUIPMENT REGISTER and CHECK LIST

[DETAILS TO BE ADDED FOLLOWING DESIGN AND DOCUMENTATION, AS WELL AS ADDITIONAL MOBILE FIREFIGHTING EQUIPMENT THAT MAY BE ACQUIRED FOR USE ONCE AN OPERATOR HAS BEEN APPOINTED]

FIRE EQUIPMENT TRAINING REGISTER

[ESTABLISH A REGISTER RELATIVE TO FIRE EQUIPMENT TO RECORD STAFF WHO HAVE UNDERTAKING TRAINING IN THE OPERATION AND USE OF ANY FIRE EQUIPMENT]