



Community Safety –
Fire & Emergency Management

Fire Hazard Assessment Plan 2020/2021



Version control of this document is managed by the Fire and Emergency Management team and amendments are recorded below.

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City of Kalamunda Fire Control Officer (Compliance) training program	Fire and Emergency Management team	2020
City of Kalamunda Fire Hazard Reduction Notice	Community Safety & CBFCO	2020/2021
City of Kalamunda Enforcement Policy SM-DSO 1.2	City of Kalamunda	2014
City of Kalamunda Infringement Policy COVID-19	City of Kalamunda	2020
City of Kalamunda Work Instruction Inclement Weather	City of Kalamunda	2019
Kalamunda advancing 2027 Strategic Community Plan	City of Kalamunda	2016
https://www.kalamunda.wa.gov.au/our-city/fire	City of Kalamunda	2020
https://www.dfes.wa.gov.au/Pages/default.aspx	DFES	2020
https://www.emergency.wa.gov.au/	Western Australia	2020
https://www.bnhcrc.com.au/	Bushfire & Natural Hazards CRC	2020
https://www.afac.com.au/	Australian Fire Advisory Committee (AFAC)	2020
https://www.climatecouncil.org.au/	Climate Council Australia	2020
https://www.aidr.org.au/	Australian Institute for Disaster Resilience (AIDR)	2020
https://www.science.org.au/	Australian Academy of Science	2020
<i>Bush Fires Act 1954</i>	Western Australia	2019
<i>Bush Fires Regulations 1954</i>	Western Australia	2019
<i>Bush Fires (Infringements) Regulations 1978</i>	Western Australia	2018
<i>Fines, Penalties and Infringement Notices Enforcement Act</i>	Western Australia	2020

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Acknowledgment

The Fire Hazard Assessment Plan 2020/2021 has been produced in accordance with the relevant sections of the *Bush Fires Act 1954* (Act) and acknowledges external departments and agencies that have contributed to the introduction of this plan.

Photo by Nicholas Parry

ACRONYMS & ABBREVIATIONS

APZ	Asset Protection Zone
AR	Accounts Receivable
BoM	Bureau of Meteorology
BRMP	Bushfire Risk Management Plan
BRMS	Bushfire Risk Management System
BRMO	Bushfire Risk Management Officer
CBFCO	Chief Bushfire Control Officer
CESM	Community Emergency Services Manager
CRO	Customer Relations Officer
CSIRO	Commonwealth Scientific & Industrial Research Organisation
COVID-19	Corona virus disease 2019
DBCA	Department of Biodiversity and Conservation Attractions
DFES	Department of Fire and Emergency Services
DFM	Dead Flammable Material
EM	Emergency Management
FCO	Fire Control Officer
FEMO	Fire and Emergency Management Officer
FER	Fines Enforcement Registry
KBDI	Keech-Byram Drought Index
OH&S	Occupational Health and Safety
PR	Public Relations
SFEMO	Senior Fire and Emergency Management Officer
UCL	Unclaimed crown land
UMR	Unmanaged reserve
VBFB	Volunteer Bushfire Brigade
VFRS	Volunteer Fire and Rescue Service

DEFINITIONS

The following definitions are provided by the Australian Disaster Resilience Glossary (2020) in conjunction with other glossary documents nationwide.

Community: The term 'community' is dynamic and can change constantly referring to common sets of shared interests, values, beliefs, and circumstances.

Resilience: The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.

Disaster: A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts (AIDR, 2018).

Emergency: An event, actual or imminent, which endangers or threatens to endanger life, property, or the environment, and which requires a significant and coordinated response.

Hazard: A source or situation of potential harm to people, infrastructure, or environment. The hazard originates as something natural, originate from human activity or from our increased interaction with natural hazards (e.g. landslides, drought) causing loss of life, injury other health impacts.

City of Kalamunda in a Snapshot



INTRODUCTION

Bushfire seasons are becoming increasingly destructive each year as seen by the recent fires termed the 'Black Summer' in the Eastern States. These fires which spanned from Queensland to Victoria caused catastrophic loss of human life, animal life, significant impact to the built environment, and saw catastrophic damage to the biodiversity within the environment. WA also saw its own bushfire emergency in Yanchep that lasted over several days, burnt approximately 14,000ha and where firefighters and the community battled heatwave conditions and challenging winds, making efforts more than difficult to bring the fire under control (Jarvis, 2020). The City also experienced its own fire emergency in January 2020 that saw residents along the escarpment around Lesmurdie under threat from a fire starting at the bottom of Mundy Regional Park and raced up the hill.

From this devastating summer our preparedness and resilience as a community to bushfires is critical (AFAC Resilience through Community Risk Reduction, 2019), along with the ongoing challenges of extended summer periods, hotter conditions, and low rainfall. A critical example of this can be seen in BoM's Bickley KBDI showing the data of soil dryness in red, which was significantly higher than the average. This unfortunately is becoming the modern trend.

Bickley KBDI

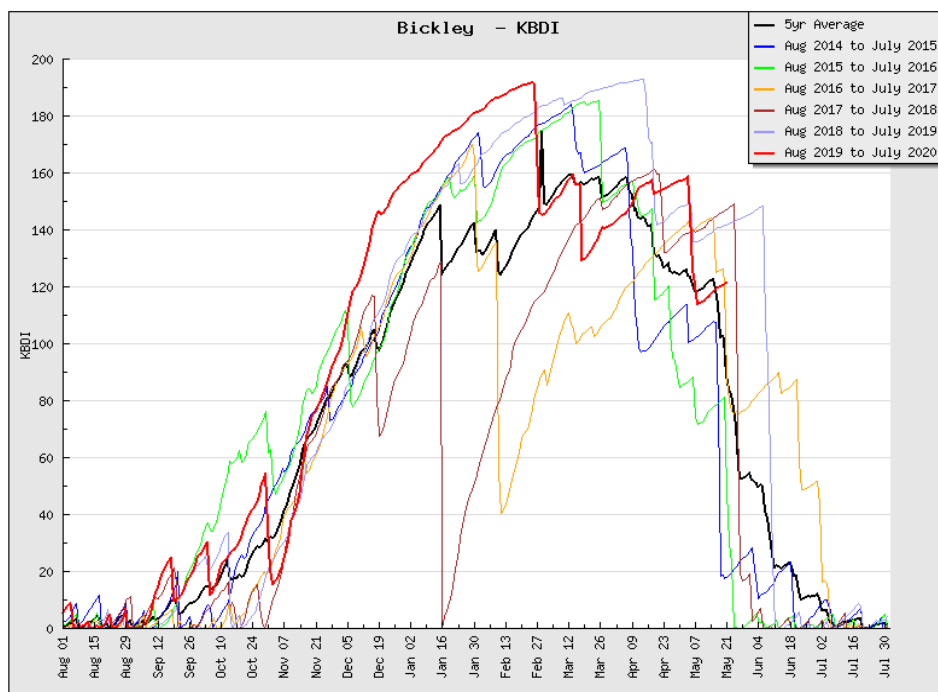


Figure 1. Bickley Keech-Byram Drought Index 5-year average (BoM).

The City acknowledges the changes we are seeing in the climate which can influence bushfires in several ways (Climate Council of Australia, 2020):

1. An extended fire season with hotter conditions can increase the intensity and spread of bushfires, leaving less time for fire hazard mitigation efforts, such as reducing fuel loads and time for people to evacuate if needed.
2. Hotter conditions and longer periods of low rainfall, the soil and vegetation dry out faster contributing to higher dead fuel loads, and therefore increasing a fires intensity, spread and time to bring under control; and
3. Extended days of warm and hot weather creates an unstable atmosphere drawing moisture and charging clouds to produce lightning strikes, which is a key factor for fire ignition.

It is also well known that significant bushfires can have a long-term impact on people and the social fabric of our communities (National Disaster Risk Reduction Framework, 2018) and therefore highlights the focus and enduring commitment for a shared responsibility in planning, preparation, response, and recovery.

To support and improve the City's community bushfire preparedness and ongoing resilience, the City of Kalamunda's fire and emergency management team have identified, using tools such as BRMS, local knowledge and experience operating in bushfires, the varying degrees of vulnerability present across the City of Kalamunda. For one example, people and properties along the top of the escarpment have the threat of fire travelling twice as fast uphill for every 10 degree of slope (Nolan, Thornton, Clarke, Cruz, 2017), or residents in Pickering Brook with minimal escape routes and vast bushland surrounding the area. The levels of risk however can vary in context as people may experience intermittent vulnerabilities due to certain circumstances, and impacts depending on the type of hazard present.

It's acknowledged that awareness of fire hazards, knowledge of fire behaviour, planning and preparation and personal circumstances can influence people's ability to start preparing, and reluctance to do so may be a result of a lack of knowing what to do, the level of risk, and understanding the effects that reducing fire hazards can have.

With knowledge from the above, the City has developed this plan for its fire hazard assessments outlining its purpose, scope, limitations, and execution.

1. AIM & PURPOSE

The 2020/2021 fire hazard assessment plan is intended to provide a comprehensive strategy for the City's annual fire hazard assessments that commence from 1 November and conclude 31 March each year. It is designed to provide a structure for a shared understanding of processes, procedures, policies, programs, and emergency management approaches. It also aligns with the City's 10-year strategic community plan outlined below.

Priority 1 Kalamunda cares and interacts
Objective 1.2 To provide safe and healthy environments for community to enjoy
Strategies 1.2.1 Facilitate a safe community environment

Success Measurements:

- Increasing community perception of safety in the City
- Increasing compliance with fire protection requirements

2. SCOPE

The plan will refer to compliance, reflective of the impact a bushfire may have and what fire risks may be reduced through legislated responsibilities of local government, the property owner and/or occupier and through assisting the community and individual's preparedness against bushfires where practicable. The City of Kalamunda are one part of the system that contributes to preparing its community but also includes other government agencies, not-for profit agencies, the community itself, businesses, households, and individuals within a model of shared responsibility.

The plan provides clarity and consistency on agreed definitions, approaches and evaluation. Other plans listed may be the focus of other requirements and procedures.

This plan identifies the potential impacts on the community that COVID-19 has had and continues to have, and will endeavour to adapt its execution where possible to ensure the safety of residents and City officers, while still ensuring all duties are carried out as required. The plan will remain credible and provide an ability to pivot promptly and reduce the impact to the plan objectives.



3. OBJECTIVES

Building resilient and prepared communities in the context of bushfires is also a significant component of the emergency management framework as it integrates the prevention, preparedness, response, and recovery cycle, and as such this plan outlines the objectives both in line with the City's strategic plan and DFES's strategic control priorities in their 2016-2028 strategic plan (2016):

3.1 City of Kalamunda objectives

- To review and implement the City's Fire Hazard Reduction Notice for 2020/2021 as per the requirement under section 33 of the *Bush Fires Act 1954* by July 2020 to distribute with the City's rates and gazette.
- To implement a strategic training program and conduct training prior to 1 November assisting and enhancing on-board duly authorised fire officer's knowledge and maintain consistency throughout 1 November to 31 March fire hazard assessment period.
- All duly authorised fire officers employed by the City will conduct quality, fair and equitable property fire hazard assessments utilising the strategy applied in this plan and abiding by established processes and procedures.
- Ensure processes and procedures for fire hazard assessments are captured in line with City policy and followed throughout 1 November to 31 March and are reviewed to determine any gaps and recommendations.
- Will demonstrate a fair and equitable approach towards enforcement for fire hazard assessments and in line with the *Bush Fires Act 1954* throughout 1 November to 31 March.
- To adopt a graduated approach to enforcement emphasising education and voluntary compliance throughout 1 November to 31 March. Should compliance not be achieved, the City may pursue more significant enforcement options.

3.2 DFES's strategic control priorities 2016-2028

- Protection and preservation of life
- Community warnings and information
- Protection of critical infrastructure and community assets
- Protection of residential property
- Protection of assets supporting individual livelihood and community financial sustainability
- Protection of environmental and heritage values

4. LIMITATIONS & ANTICIPATED RISKS

4.1 Limitations

The delivery of fire hazard assessment strategies solely by the fire and emergency management team aligns with some, but not all, of the factors that contribute to community preparedness, and reflect on what aspects of risk reduction fall not only within the legislative responsibility, but also what falls within the City's influence. Fire hazard assessments may be limited by resources, financial restrictions and scale of the area required for assessment. Influencing these factors may be beyond the scope or capacity of the City.

March 2020 saw the Coronavirus COVID-19 outbreak. This pandemic has affected all aspects of communities state-wide, and due to the continuing changes and restrictions, the plan will adapt and reflect any directions being imposed by State that cannot be quantified at the time of preparing this plan.

4.2 Anticipated Risks

4.2.1 Bushfire

Anticipated risks identified such as bushfires impacting the community through the assessment period is taken into consideration and as such will see resources redirected to response, emergency management and recovery efforts where and when requested.

4.2.2 Fire bans

Imposed bans that prohibit equipment use and movement of vehicles during fire hazard assessments may put a halt on required works to be completed prolonging the execution timeframe.

4.2.3 Heatwaves

Other risks may involve declared heatwaves impacting the community's health and ability to complete required work. It also reduces the officer's ability to conduct assessments as per the City's work instruction on inclement weather.

The City where possible can influence these limitations to achieve improved outcomes that may enhance fire hazard reduction and preparedness through a range of approaches such as:

- Issuing a Fire Hazard Reduction Notice each year as per legislation.
- Engaging with the community through the community engagement and communication plan, adapted each year based on community feedback and the changing climate.
- Advocate for appropriate processes and procedures that benefit the City and community.

Whilst limitations exist, employing these approaches to maximise the City’s influence may assist in delivering improved outcomes. It also recognises the limitations in shared responsibility for community preparedness that goes beyond the scope of the City.

5. MEASURES OF SUCCESS

5.1 Reporting

To measure the effectiveness of this plan, a summary report will be drafted at the conclusion of the fire hazard assessment period for 2020/2021. The summary will capture the outcomes of successes, limitations, and recommendations from the plans phased approach. This will continue to contribute to the long-term outcome or changes desired for reducing fire hazards and improving preparedness in line with legislation and the City’s strategy.

This summary will also take into consideration the impact COVID-19 has had and may continue to have, capturing what the outcomes have been if the execution required adapting.



6. FIRE HAZARD ASSESSMENTS 2019/2020 IN REVIEW

The City conducted its fire hazard assessments from 1 November 2019 and concluded on 31 March 2020. This period saw over 3500 properties assessed across the City, with an even split in improved compliance after the routine fire hazard assessments (figure 2).

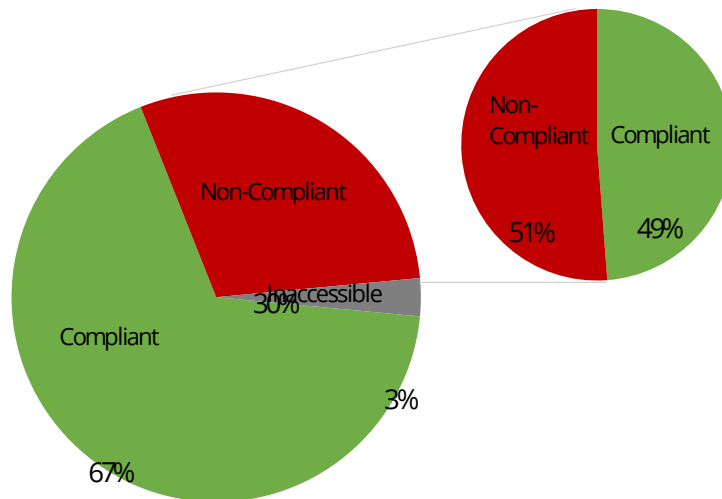


Figure 2. Total compliance from fire hazard property assessments across the City.

A summary report was completed and has provided the opportunity to review and improve on the approach, processes, operational capacity, data collected, and applications used for fire hazard assessments, which has further provided the opportunity to enhance the 2020/2021 fire hazard assessment plan. The team also identified the need to incorporate in our continuing engagement a targeted approach towards requirement of bushfire preparedness. This strategy will focus on three approaches and will be included in the community engagement and communication plan – Storm and Bushfire preparedness:

1. Risk analysis of all residents within the City that may be impacted by such factors as egress and property location, topography, bushland separation distance and awareness or acceptance of risk.
2. Any combined issues raised from the community for a particular area. The 2019/2020 saw a raised concern in the High Wycombe South/Forrestfield North area.
3. At-risk groups that may have restricted ability in performing required tasks, access to online content or may need additional assistance with everyday tasks.

Fire Hazard assessments utilised an inspections application to capture assessment data however experienced outcomes that set back the inspections conducted, along with inaccuracies of inspection data results. The City has since left this inspection application and will utilise new technologies to improve inspection results, efficiency, and data collection and retention.

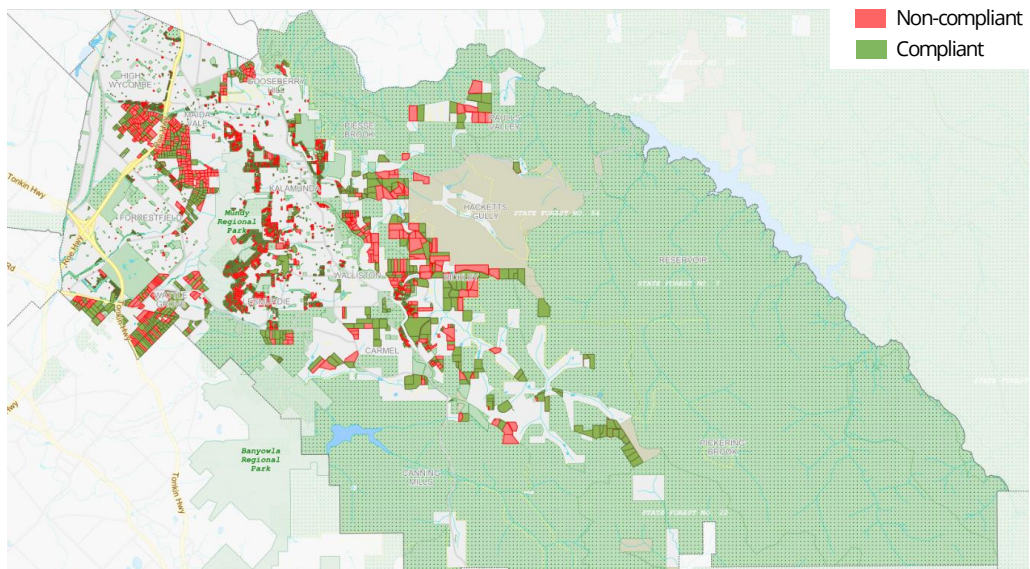


Figure 3. 2019/2020 fire hazard assessment heat map of compliant and non-compliant properties.

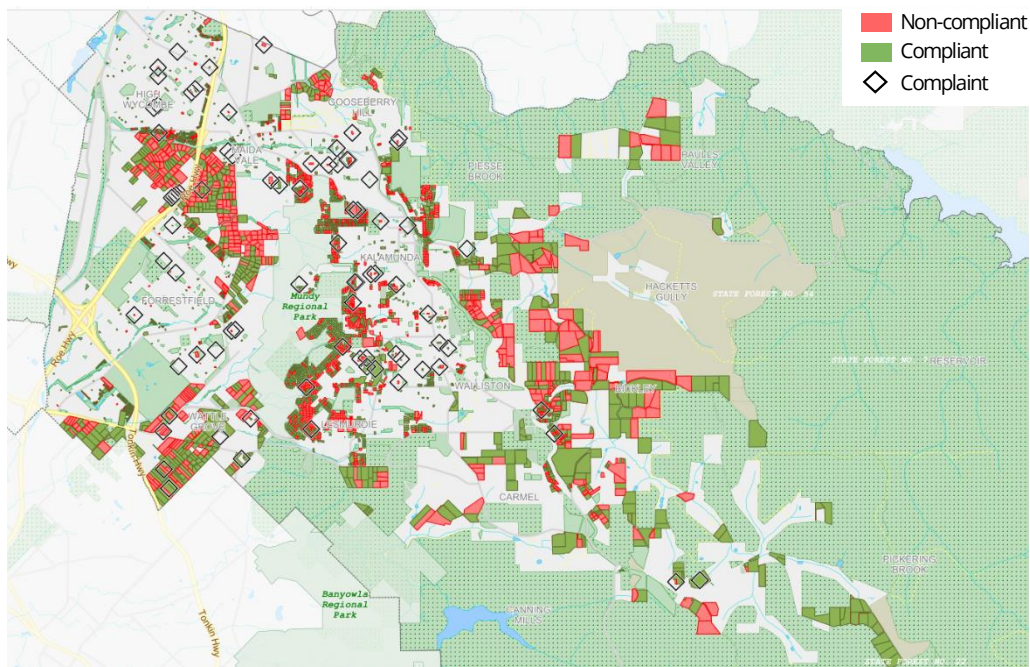


Figure 4. 2019/2020 fire hazard assessment heat map including complaints of fire hazards on properties.

7. EXECUTION

The execution of this plan takes the approach based on several factors:

- Context:** Risk assessment, geography, community, and area profile.
- Legislation:** Informs the approach that can be taken.
- Scope:** The workforce available will determine the strategy and overall outcome of fire hazard assessments.
- Resourcing:** Current and future budget availability.

Drawing on the method taken from 2019/2020, this year's plan will follow the same phased approach and are broken down as follows:

- PHASE 1 – Risk Identification**
- PHASE 2 - Notice**
- PHASE 3 – Variations**
- PHASE 4 – Staff & Training**
- PHASE 5 – Fire Hazard Assessments and Enforcement**

To enable effective execution of this plan, the City will continue to commit additional resources in the way of casual Fire Control Officers and hire vehicles (compliance purposes only) to the Community Safety team through the period of October to January, with the possibility of extension, dependant on budget availability.

Execution will follow the City's processes that are in place which are reviewed annually or at any other time the department considers it appropriate. Due to the impact of COVID-19 and the unknown of emerging risk, the City will have in place a contingency for conducting fire hazard assessments that ensure the duties are continued to be carried out in line with restrictions or direction imposed by the State.

8. PHASE 1 – Risk Identification

Due to limitations, it is recognised not all land/properties can be assessed and therefore prior to commencement of fire hazard assessments the fire and emergency management team will use multiple efforts to identify an effective strategy in which to conduct fire hazard assessments.

Designated bushfire prone areas (coloured pink on map) have been identified by the Fire and Emergency Services (FES) Commissioner as being subject, or likely to be subject to bushfire attack (DFES, 2020). The City of Kalamunda can be seen in Figure 5 captured in whole as a bushfire prone area.

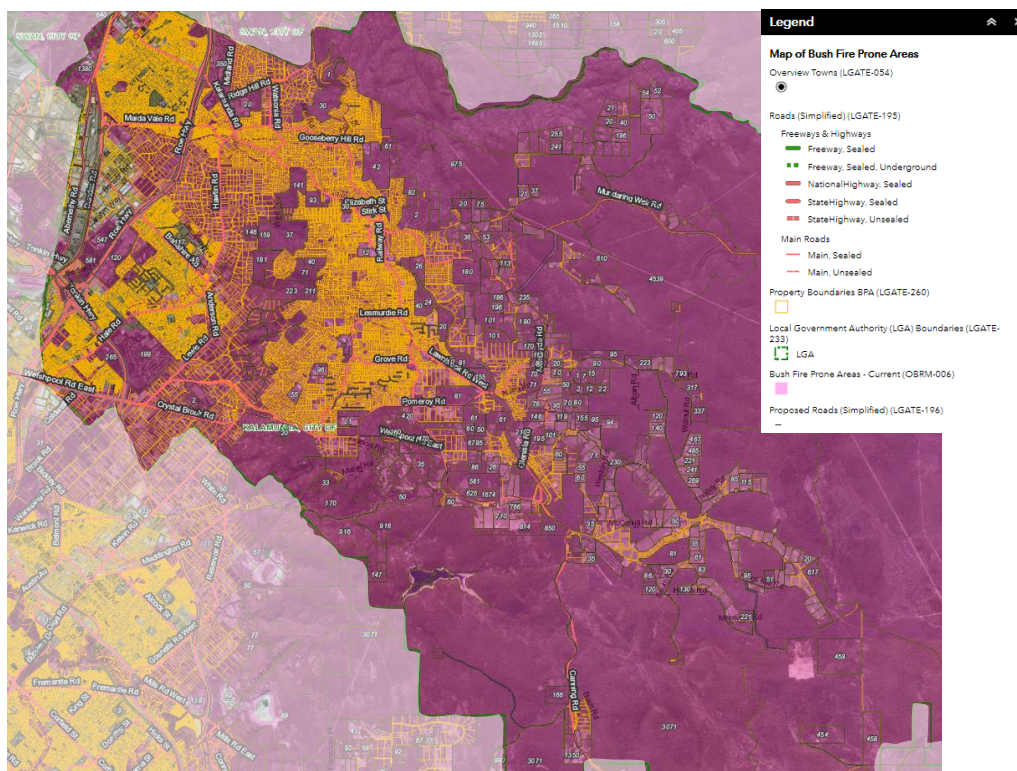



Figure 5. DFES Bushfire Prone Area Map – City of Kalamunda

With this as a foundation, the efforts in place will endeavour to ensure a fair and equitable approach and look at the following factors to assist with the fire hazard assessment strategy:

- Bushfire Risk Management System (BRMS)
- Egress & property location
- Mitigation
- Topography
- Community Profile / Area History

8.1 Bushfire Risk Management System (BRMS)

Bushfire risks will vary from year to year and is captured on an ongoing basis. The City along with DFES utilise BRMS to map the risk of assets which assists in identifying an improved strategy for fire hazard reduction efforts including property assessments. The system is a digital database that assists the City in a tenure blind approach, capturing specific risk ratings for all assets within our boundaries.



Consequence \ Likelihood	Minor	Moderate	Major	Catastrophic
Almost certain	3D (High)	2C (Very High)	1C (Extreme)	1A (Extreme)
Likely	4C (Medium)	3A (High)	2A (Very High)	1B (Extreme)
Possible	5A (Low)	4A (Medium)	3B (High)	2B (Very High)
Unlikely	5C (Low)	5B (Low)	4B (Medium)	3C (High)

Figure 6. BRMS Risk Rating table

HUMAN SETTLEMENT	ECONOMIC
<p>Residential areas Rural urban interface areas and rural properties.</p> <p>Places of temporary occupation Commercial, mining and industrial areas located away from towns and population centres (that is, not adjoining residential areas).</p> <p>Special risk and critical infrastructure Hospitals, nursing homes, schools and childcare facilities, tourist accommodation and facilities, prison and detention centres, government administration centres and depots, incident control centres, designated evacuation centres, police, fire and</p>	<p>Agricultural Pasture, grazing, livestock, crops, viticulture, horticulture and other farming infrastructure.</p> <p>Commercial and industrial Major industry, waste treatment plants, mines, mills, processing and manufacturing facilities and cottage industry.</p> <p>Tourist and recreational Tourist attractions and recreational sites that generate significant tourism and/or employment within the local area.</p> <p>Commercial forest and plantations</p> <p>Drinking water catchments</p>
ENVIRONMENTAL	CULTURAL
<p>Protected Rare and threatened flora and fauna, ecological communities and wetlands.</p> <p>Priority Fire sensitive species and ecological communities</p> <p>Locally important Nature conservation and research sites, habitats, species and communities, areas of visual amenity.</p>	<p>Aboriginal heritage Places of indigenous significance.</p> <p>Recognised heritage Assets afforded legislative protection through identification by the National Trust, State Heritage List of Local Planning Scheme Heritage List.</p> <p>Local heritage Assets identified in a Municipal Heritage Inventory or by community.</p> <p>Other Other assets of cultural value, for example community centres and recreation facilities.</p>

The data captured considers fuel load, fuel type, fuel age, fuel density, separation distance, canopy cover and slope analysis.

With all this data entered a rating of 1A through to 5C is produced which identifies the risk rating (Figure 6). Assets can be grouped if they are susceptible to the same risk (Figure 7) and using the tenure blind approach means that no matter who owns the land, the data mapped is completed to the same standard.

Fire hazard assessments utilise this system as a guide only to assist in identifying areas that may be deemed extreme and very high risks based on the data entered.

Figure 7. Grouping of assets under BRMS

8.2 Egress and Property Location

NOTE: This section suggests areas that are of extreme risk with limited access on gazetted roads and by no means is definitive. Bushfires can be unpredictable and may impact several areas, roads, and people at once. All properties and road access in the City of Kalamunda is considered a risk.

The fire and emergency management team considers the added risk to some properties across the whole City where egress may be limited should a bushfire overrun the road, cause road closures or road damages, potentially isolating those being impacted. It is therefore critical that properties in these positions are prepared early in case evacuation is not possible.

8.3 Mitigation

Awareness of mitigation efforts occurring throughout the year is considered along with the impact it may have on the surrounding private properties and fuel loads. Mitigation can take the form of prescribed burns, mechanical works to mulch, installing firebreaks, slashing grasses, pruning or the reduction of any dead vegetation deemed a fire hazard. These efforts contribute to the surrounding property risk level as it aims to reduce the fuel loading and reduce the increased potential for a fast-moving fire.

8.3.1 Local

Mitigation of City reserves, verges and any other City owned land are conducted by combined efforts of the City's Parks and Environment team and the Fire Mitigation (Protection) team based at the City's Operations Centre in Walliston. The team utilise their own plans and strategies to manage these risks.

8.3.2 State

State Forest, National Park, UCL, UMR and any other state-owned land is the responsibility of such managing departments. Some may include but are not limited to DFES, DBCA, Water Corporation, Department of Planning & Land Heritage, Telecommunication land parcels, WA Planning Commission and Department of Education.

8.4 Topography

The topography across the City will be used to guide the initial identification of risk along with BRMS data that may contribute to fire behaviour, and the impact it may have on people and property.

Fire behaviour typically increases its rate of spread when travelling uphill, where for every 10 degrees of slope fire will travel twice as fast. We can therefore gauge extreme risk to be both at the foothills or valleys where if fires start can lead to fast movement uphill and, at the top of the hills where direct impact from the fire travelling uphill is increased (appendix 1).

8.5 Community Profile / Area History

The fire and emergency management team considers community profiling to improve understanding of the community risk and what influence Fire Control Officers may have. This may include vulnerable groups (aged care, disabilities), culturally and linguistically diverse groups, some schools, places of worship, businesses, and residents (independent and/or families).

Statistics are obtained from the Australian Bureau of Statistics and used to gauge an overview of data (page 6) along with data captured from the community engagement and communication summary report.

Area history information will involve any learnings or feedback received from fire hazard assessments the year previous from the community and/or Fire Control Officers in the field. It will also include any bushfire incidents that have occurred which may have caused threat or impact to the residents of that area.

These factors will predominantly be a focus in the off season (May – October) to assist in early preparation and awareness. These efforts are also captured in the community engagement and communication plan 2020/20201. Property history of consistent non-compliance will factor into the actions of the FCO however is not the only determining factor for any enforcement put forward by the FCO.



9. PHASE 2 – Notice (Jul–Mar)

Bush Fires Act 1954

Part III – Prevention of bush fires

Division 6 – General restrictions, prohibitions, and offences

s. 33. Local government may require occupier of land to plough or clear fire-break

9.1 Outline

The City have a legislated responsibility under section 33 of the *Bush Fires Act 1954* to give notice in writing to owners and/or occupiers of land within the local government area to prepare their properties against the risk of bushfire (pg. 22-23)

9.2 Execution


The Chief BFCO holds responsibility in writing and reviewing the notice annually and is assisted by Community Safety, PR & Customer Relations and Legal for printing and distribution. The notice is gazetted as required under the *Bush Fires Act 1954* and delivered alongside the Rates each year in July. The notice identifies the request for all owners or occupiers of land to install or upgrade firebreaks and to carry out any works identified in the notice by a duly authorised FCO.

The notice will be incorporated into the community engagement and communication plan for bushfire preparedness where a range of media is used to broadcast the requirements outlined. Further details are available in the Community Engagement & Communication plan 2020/2021 – Storm & Bushfire preparedness.



**STORM & FIRE
PREPAREDNESS**





COMPLIANCE DUE BEFORE: 1 NOV 2020

ASSESSMENTS COMMENCE FROM: 1 NOV 2020

Important: The works outlined below must be completed by 1 November 2020 and maintained in this state up to and including 31 March 2021

FIRE HAZARD REDUCTION NOTICE

2020/2021

NOTICE TO ALL OWNERS AND OCCUPIERS OF LAND WITHIN THE CITY OF KALAMUNDA

Pursuant to Section 33 of the *Bush Fires Act 1954 (WA)*, the City of Kalamunda gives you written notice to act as specified in this notice to land that you own and/or occupy and with respect to any matter which is upon the land that you own and/or occupy situated within the district of the City of Kalamunda. Failure or neglect to comply with the requisitions of this notice is an offence and can result in a penalty of up to \$5000. The City of Kalamunda gives you notice that its officers, servants, workmen, contractors, vehicles, machinery and appliances (as the officers deem fit) may enter upon the land and carry out the requisitions of this notice that are not complied with by the time specified in the notice, and the amount of any costs and expenses incurred may be recovered from you as the owner and/or occupier of the land

ALL LAND WITH A TOTAL AREA OF 4000m² OR MORE

- FIRE-BREAKS**
Install or upgrade a 3-metre-wide by 4-metre-high clearance, bare mineral earth, continuous (no dead ends) trafficable fire-break as close as possible inside the entire perimeter of the land. A reticulated and maintained green lawn may be accepted in lieu of a firebreak.
- DEAD FLAMMABLE MATERIAL**
Maintain all dead flammable material below 8 tonne per hectare (see definition fuel load).
- SLASHING**
Dead grass, shrubs and plants shall be slashed, mowed, or trimmed down to a height no greater than 50mm across the entire property.
- ASSET PROTECTION ZONE (APZ)**
Maintain a fuel reduced zone around all buildings or assets of value which extends 20 metres from the outermost point of the building or asset.
 - » Ensure gutters, roofs and walls of buildings are free of flammable matter.
 - » Fuel load within the 20 metres shall be reduced and maintained to no more than 2 tonne per hectare
 - » Trees over 5 metres in height must be under pruned up to 2 metres.
 - » Trees or shrubs within 2 metres of the asset must be pruned so that they have an overall height of no greater than 2 metres.

ALL LAND WITH A TOTAL AREA LESS THAN 4000m²

- DEAD FLAMMABLE MATERIAL**
Maintain all dead flammable material below 8 tonne per hectare (see definition fuel load).
- SLASHING**
Dead grass, shrubs and plants shall be slashed, mowed, or trimmed down to a height no greater than 50mm across the entire property.
- CLEAN GUTTER DEBRIS**
Ensure gutters, roofs and walls of buildings are free of flammable matter

VARIATION TO THE FIRE HAZARD REDUCTION NOTICE

If you consider, for any reason, that it is impractical to meet the requirements as per this notice, you may apply in writing for a variation to the requirements of this notice to the City of Kalamunda by no later than 1 October 2020, to request authorisation to employ other methods of fire prevention to land that you own and/or occupy. **An administration fee of \$150 applies for applications received after 1 October 2020.**

If permission is not granted to you for a variation of this notice, you must comply with the requirements outlined in the Fire Hazard Reduction Notice.

Variation request application forms are available before 1 October on the City's website at:
www.kalamunda.wa.gov.au/our-city/fire/variations

ADDITIONAL WORKS

In addition to the requirements of this notice, regardless of land size, you may be required to carry out further fire prevention works on your land to reduce any hazards considered necessary by the duly Authorised Officer of the City of Kalamunda. If required, these requirements will be outlined in a 'work order' sent to the address of the owner and/or occupier.

EMERGENCY MANAGEMENT PLANS AND CITY APPROVED TREATMENT PLANS

All properties and/or land that are subject to a Bushfire Management Plan, Emergency Management Plan or an approved Bushfire Attack Level assessment (BAL), as a result of subdivision, development application or a City approved treatment plan must comply with the requirements of such plans in their entirety. Compliance with any additional plans does not constitute compliance with this notice.

DEFINITIONS

FIREBREAK

A strip of land cleared of all flammable material with the intention of minimising the spread or extension of a bushfire and provide safe access on your property for emergency vehicles and other firefighting operations.

- » No less than 3 metres wide and 4 metres height clearance inside and along all boundaries (including boundaries adjacent to roads, rail and drain reserves and all public open space reserves).
- » Must have a corner turning radius of up to 10 metres
- » Must be a mineral earth break with a continuous trafficable surface for a 4WD vehicle, clear of any obstructions and must not terminate in a cul-de-sac (dead end)
- » Maintained and living lawns are acceptable in conjunction with or in lieu of mineral earth fire breaks, provided that the same width and height requirements for a fire break are applied.
- » Must not be more than 4 metres wide (further width extensions may be considered upon written application for approval to the City).

FUEL LOAD:

Any material such as wood, leaves and grass that is likely to be ignited and capable of burning.

- » Leaf litter on the ground inclusive of leaves, twigs (up to 6mm diameter) and bark. A fuel load depth of 15mm from the top layer to the mineral earth beneath is indicative of approximately 8 tonne per hectare
- » Mulch piles, stored firewood and burn piles contribute to fuel load and must be stored safely or removed from the property.

If you require any further information, please call the City of Kalamunda Community Safety team on (08) 9257 9999 or visit www.kalamunda.wa.gov.au/our-city/fire.

Rhonda Hardy
CHIEF EXECUTIVE OFFICER

kalamunda.wa.gov.au

T 9257 9999 F 9293 2715 E enquiries@kalamunda.wa.gov.au
2 Railway Road KALAMUNDA WA 6076 PO Box 42, KALAMUNDA WA 6026
ABN 6074 1095 678

10. PHASE 3 – Variations (Jul–Mar)

10.1 Outline

The variation application is a request to vary one or more requirements outlined in the current Fire Hazard Reduction Notice if considered impractical to carry out and must be submitted prior to 1 October each year.

The variation is not considered an exemption to requirements applied for and must outline other methods to be carried out by the applicant. The notice may change yearly and therefore an approved variation is only valid until 31 March the following year.

NOTE: An administration fee of \$150.00 will be enforced for any applications received after 1 October each year.

10.2 Requests & Payments

All requests for a variation will be directed to the City through the following options:

- form available on the website
<https://www.kalamunda.wa.gov.au/our-city/fire/variations>
- City email address
enquiries@kalamunda.wa.gov.au
- in person at front counter administration building.

Any variation applications received after 1 October will be reviewed first by the City's CROs for confirmation of payment and forwarded on for approval to the Chief BFCO or their delegate. Any applications not paid for or considered incomplete will be returned to the applicant and notified to resolve.

Any payment for variations after 1 October can be made utilising the payment section of the form (pg. 25-26) or in person at the City of Kalamunda administration centre.

10.3 Approval

Approved variations and all associated documentation are compiled and sent to notify the applicant of approval. The documents are subsequently saved with the City for record purposes.


10.4 Rejection

The Chief BFCO or their delegate has the authority to reject an application for variation deemed practical to conduct the works required under the current notice or payment has not been made if submitted after 1 October without proof of receipt.

NOTE: If applications received after 1 October are rejected on reasonable grounds by the Chief or their delegate the \$150 is non-refundable. Any requests made by the applicant to remove the fee will be determined by senior management.

Request for Fire Hazard Reduction Notice Variation

If you consider for any reason that it is impractical to clear firebreaks or other hazards as required by the Fire Hazard Reduction Notice, or if natural features render works unnecessary, you may apply in writing to the City of Kalamunda or its duly authorised officers, not later than 1 October annually, for a variation listing alternative methods of fire prevention on your land.



Applicant's Full Name		Date	
-----------------------	--	------	--

Application will not be approved if:

- There are dead-end fire breaks without sufficient turn around bays.
- Application document is not filled out in whole.
- The applicant has the ability to achieve the requirements of the current Notice as deemed by the Chief Bushfire Control Officer.
- Variation renders the property unsafe for Firefighters and/or other emergency personal.
- No attempt of alternative works has been made.

NOTE: If permission is not granted for this application you must comply with all the relevant requirements of the Notice.


If a variation is approved, the applicant must adhere to all the conditions as specified by the Chief Bush Fire Control Officer. If the applicant fails to adhere to the specified conditions, they may face penalties up to \$5000.


A variation is only valid for the current season.
 If a property requires a variation, applicants are required to apply every year before 1 October. Requirements may change each year so it is advised that applicants refer to the current Notice to determine if they still require a variation. **An administration fee of \$150 applies for applications received after 1 October.**

A variation belongs to the applicant.
 If a property is sold or has new tenants, the current variation becomes void. The new owner/tenant has 14 days to notify the City and apply for a new variation. The new variation is assessed based on the new application received. The City may not automatically approve a variation based on a previous application.

Variations may be withdrawn at any time by the City of Kalamunda Chief Bush Fire Control Officer.
 Applications can be entered online at the City of Kalamunda Website, emailed to: enquiries@kalamunda.wa.gov.au or sent via post PO Box 42, Kalamunda WA 6926

PAYMENT METHOD

 In Person
 2 Railway Road, Kalamunda (Cash, Cheque, Money Order, Credit Card or EFTPOS)

 Credit Card Payment
 Only Mastercard or Visa will be accepted (a surcharge of 0.46% is payable on all credit transactions).

Payment by Credit or Debit Card Mastercard
Visa

Cardholders Name:

Card Number:

Expiry Date / CVC

Amount \$ 0.46% surcharge applies

Signature Date: / /

kalamunda.wa.gov.au

T 9257 9999 F 9293 2715 E enquiries@kalamunda.wa.gov.au
 2 Railway Road KALAMUNDA WA 6076 PO Box 42, KALAMUNDA WA 6926
 ABN 60 741 095 678

v5.2

11. PHASE 4 – Staff & Training (Oct-Nov)

Bush Fires Act 1954

Part IV – Control and extinguishment of bush fires

Division 1 – Local governments

s. 38. Local government may appoint bush fire control officer

11.1 Outline

The City will employ casual staff as required and appoint and gazette them as Fire Control Officers for the purpose of carrying out fire hazard assessments from 1 November to 31 March. Fire and emergency management team will provide support and leadership throughout this period ensuring execution is safely maintained.

11.2 Execution

To carry out their duties with the City of Kalamunda, FCOs and Rangers will partake in the training provided by the fire and emergency management team to ensure consistency, confidence, and effective outcomes of fire hazard assessments. Drawing on the training program that was trialled in October 2019, this year will implement an improved program and follow the same approach by including the following targets:

- Relevant legislation
- City of Kalamunda structure and policies
- OH&S (incl PPE, PPC and Vehicles)
- Administration and Customer Service
- Risk assessment overview
- Fire Hazard Reduction Notice breakdown
- Other fire hazard reduction efforts (e.g. skip bins)
- Inspections application
- Basic fire behaviour

Training for existing staff (Rangers & CROs) will be in the form of a refresher module to ensure their knowledge base is current and to continue competency.

Training for newly appointed officers will commence in October and run for a period determined by the commencement of employment prior to 1 November when assessments proceed.

NOTE: The training program is intended to only provide training specific to fire compliance within a local government setting and particularly within the City of Kalamunda. It in no way provides an official qualification or accreditation as a Fire Control Officer in the capacity of an emergency or through DFES.

11.3 Roles and Responsibilities

Table 1 below identifies the team that will hold a role and/or responsibility under Community Safety regarding fire hazard assessments.

Position	Role/Responsibility
Manager Environmental Health & Community Safety	<ul style="list-style-type: none"> • Management of department • Enforcement reviews and support • Hardship (COVID-19) approvals
Coordinator Community Safety	<ul style="list-style-type: none"> • Coordination (operations) of department • Enforcement reviews and support • Hardship (COVID-19) approvals
CESM/Chief BFCO	<ul style="list-style-type: none"> • Training support • Variations review and approvals • Property assessment support
Senior Fire & Emergency Management Officer	<ul style="list-style-type: none"> • Training facilitation & delivery. • Coordination (operations) of assessments and support • Administration support • Property assessment & fire hazard complaints support • Enforcement reviews and support • Extension requests (medical) approvals
Fire & Emergency Management Officer	<ul style="list-style-type: none"> • Infield support • Property assessment & fire hazard complaints • Administration support • Enforcement reviews and support • Extension requests support
Customer Relations Officer	<ul style="list-style-type: none"> • Administration lead • Administration support (reserve)
Senior Ranger	<ul style="list-style-type: none"> • Administration support (reserve) • Property assessment support
Casual Fire Control Officers	<ul style="list-style-type: none"> • Property assessments • Extension requests
Rangers	<ul style="list-style-type: none"> • Property assessments support • Extension requests support

Table 1. Internal Roles & Responsibilities

11.4 Operational equipment

11.4.1 Vehicles

All vehicles provided to FCOs to conduct fire hazard assessments will be fit for purpose and meet the standard outlined by Community Safety.

It will be easily identified with hi visibility magnets on both sides, back and bonnet of the vehicle reading:

- Fire Control Officer
- City of Kalamunda
- Fire

The vehicles will be 4WD to drive firebreaks safely and effectively in their entirety across the varying terrain presented across the City. They will also include suitable tyres, reversing camera, alternating warning lights, fire extinguisher and first aid kit.

The Fire and Emergency management team will additionally provide a Cel-Fi 4G booster kit to improve communications and safety for the FCO along with an additional first aid kit suitable for outdoor activity.

11.4.2 PPE & PPC

All PPE and PPC will be provided by the Community Safety team and be worn as per internal procedure. The following are worn and used by all Community Safety officers when conducting fire hazard assessments:

- | | |
|---|--------------------------------------|
| • Load bearing high visibility vests | • Cargo pants with reflective strips |
| • ID cards | • Hat |
| • Body cameras | • Kit bags |
| • Navy blue, long sleeve collared shirt | • Portable tablet device |
| • Hard toe black boots | • Two-way radio |



11.5 Safety and Welfare

All authorised FCOs conducting fire hazard assessments will adhere to the following principals and will be provided training that captures the following:

- **Property awareness**
FCOs will remain situationally aware when entering any parcel of land and will continually demonstrate respect and integrity towards all properties and their owners and/or occupiers (e.g. gates, animals, privacy).
- **Fires and other incidents**
Any emergencies the FCO identifies will immediately be reported to 000 and the City office. FCOs are non-operational and will not attempt any firefighting operations beyond their capacity and equipment.
NOTE: All FCOs will remain aware to work only within their scope and abilities and will not attempt any activity (e.g. first aid) if not trained or qualified to do so.
- **Vehicles use**
Vehicles will be used safely and in accordance with all road rules and laws and will not enter any area marked as prohibited or sensitive (e.g. biosecurity, dieback, contaminated sites).
- **Animal safety and welfare**
FCOs will remain situationally aware when moving around properties that contain animals and will refrain from contact where possible to ensure safety and reduce stress to the animal/s.
- **Officer and resident safety and welfare**
FCOs will ensure that safety of self and others is always maintained prior to and during all property assessments and will not enter a property if it is not safe to do so without appropriate assistance and notification.

12. PHASE 5 – Fire Hazard Assessments & Enforcement (Nov-Mar)

Bush Fires Act 1954

Part III – Prevention of bush fires

Division 6 – General restrictions, prohibitions and offences

s. 33(1)(a) – to plough, cultivate, scarify, burn or otherwise clear upon the land fire-breaks in such manner, at such places, of such dimensions, and to such number, and whether in parallel or otherwise, as the local government may and is hereby empowered to determine and as are specified in the notice, and thereafter to maintain the fire-breaks clear of inflammable matter;

s. 33(1)(b) to act as and when specified in the notice with respect to anything which is upon the land, and which in the opinion of the local government or its duly authorised officer, is or is likely to be conducive to the outbreak of a bush fire or the spread or extension of a bush fire,

12.1 Outline

Assessments will follow a staged approach of routines and follow-ups. Routines will be the initial assessment allowing a 14-day period for non-compliant properties to complete work outlined by an authorised FCO. Follow ups will be conducted after the 14-day period and if deemed still non-compliant further action will be taken.

12.2 Execution

Property assessments will largely be conducted by the causal FCOs until the conclusion of their contract. Rangers will provide support by attending to fire hazard complaints, zonings and increasing assessment volumes at the completion of the casual FCOs contract.

Fire hazard assessments are broken down into two categories and assessed against the following as per the notice (appendix 2).

- **All land with a total area of 4000m² or more**
 - Fire Breaks
 - Dead Flammable Material (DFM)
 - Slashing
 - Asset Protection Zone (APZ) – incl gutters
- **All land with an area of less than 4000m²**
 - Dead Flammable Material (DFM)
 - Slashing
 - Gutter Debris

12.3 Zone/Area allocation

Prior to commencement of assessments causal FCOs will be allocated a zone/area (appendix 3) to which they will focus their attention. Zone/area scope will be dependent on FCO numbers. Rangers are allocated zones however are separate to the casual FCOs due to their duties and are supervised by the Senior Ranger.

12.4 Routine fire hazard assessments

Bush Fires Act 1954

Part IV – Control and extinguishment of bush fires

Division 1 – Local governments

s. 39. Special powers of bush fire control officers

Bush Fires Act 1954

Part V – Miscellaneous

s. 57. Obstructing officers

All property assessments will commence as routines where the FCO will be assigned a workload determined by the Senior Fire and Emergency Management officer, reflective of the initial risk assessment. The assessments will capture a street by street approach and strategically move through the area.

An average number of properties will be confirmed after the first two weeks of assessments to review assignment of properties to the FCO and anticipated progress rates to aid the FCO if required.

NOTE: If any property owner and/or occupier obstructs, resists, hinders or in any way opposes the FCO in conducting their duties authorised under the *Bush Fires Act 1954* (Act) is committing an offence under s.57 of the Act.

NOTE: Permission to access properties for a fire hazard assessment is not required by the authorised officer under the *Bush Fires Act 1954* however all City officers will demonstrate respect and awareness when moving around properties and will capture all movements on allocated body cameras. Appointment requests will only be accepted after notification of an inaccessible property or extenuating circumstances approved by management.

Properties deemed non-compliant by the officer will be marked using a fire inspection application. This application will capture all requirements under the notice that have or have not been actioned by the property owner and/or occupier. Photos will also be taken and recorded as evidence of non-compliance.

The FCO will have the opportunity to act on properties deemed non-compliant by either issuing a work order or infringement with the inclusion of a work order.

NOTE: The FCO will ensure they are guided by the City's Enforcement policy.

A work order will commit the owner and/or occupier to a 14-day timeframe to have requirements noted in the work order completed. The work order issued will be delivered via registered post to ensure no mail is missed.

NOTE: The City recognises the delay with Australia Post and has therefore been considered and is inclusive of the 14-day timeframe. Registered mail returned unclaimed will be actioned appropriately by the fire and emergency management team.

12.4.1 Compliant Properties

Properties assessed after a routine and/or follow up that are marked as compliant will be entered into the inspection application and no further action will be required unless a complaint is received.

12.4.2 Inaccessible properties

Properties where access by the FCO cannot be gained will be marked in the fire inspection app as non-compliant until such time it can be assessed. The property owner will be notified by letter to contact the City within 48 hours to organise a time when either owner and/or occupier is on site or for access to be available.

If no contact has been made by the owner after 48 hours a follow up will be conducted by the fire and emergency management team to determine if access is possible. Non-compliance from the owner either verbally or in writing, denying access for a fire hazard assessment may constitute an offence under the *Bush Fires Act 1954*.

12.5 Extension for work requests

Extension requests will be based on the following evidence:

- **Skip bins**
Owners and/or occupiers that obtain skip bins must supply proof of booking date from the company providing the skip bins to the FCO. From the delivery date the owner and/or occupier will be provided a further 48 hours to comply with the work order.
- **Contractors**
Owners and/or occupiers that engage contractors to complete works against the work order must provide the FCO with the start and completion date booked in and/or a paid invoice along with the completion date. Required work must be completed as close as possible to the 14-day timeframe outlined on the work order but no more than 21 days in total.

Owners and/or occupiers that are experiencing extenuating circumstances (medical/other) and believe they can't meet the requirements in a 14-day timeframe, must in writing or via email apply for an extension to requirements outlined in the work order (non-compliance) issued by an FCO. The request will be reviewed, and the applicant will be notified with amended date if approved.

Extension requests due to financial hardship relating to COVID-19 may apply in writing or email with attached evidence to the City at enquiries@kalamunda.wa.gov.au or by mail. These requests will be reviewed and approved by senior management.

NOTE: All requests for extensions for extenuating circumstances must have attached evidence that is current. Completion dates will be determined on a case by case review. The City will endeavour to work with property owners and/or occupiers that have extenuating circumstances to be bushfire prepared.

12.6 Complaints

All complaints received by community safety will be subject to the same approach of routine and follow up assessments by an FCO. They will be sighted and actioned appropriately maintaining a fair and equitable approach.

Should a property owner have a concern with the manner in which an initial assessment has been conducted and/or the requirements of a work order that has been issued, the assessment can be reviewed by the City's Community Safety team. A request for a review should be provided in writing to

enquiries@kalamunda.wa.gov.au

12.7 Zonings

Zonings are captured with properties in the process of a sale or division and are subject to a fire hazard assessment between 1 Nov – 31 Mar. Zoning assessments will be largely completed by the Rangers.

The CRO will ensure prior to assignment it has not already been completed by an FCO in their allocated zone to avoid assessment duplication.

12.8 State land & Reserves

City reserves and verges are managed by the Parks and Environment team and hold their own strategies and mitigation plans. These parcels of land are not subject to a routine fire hazard assessment unless the FCO sights fire hazards as extreme or very high. Any complaints received regarding these parcels of land will be forwarded to the relevant contact for their action.

State land and UCL/UMR are not subject to the City's fire hazard assessments due to the ongoing management and mitigation by state departments. Any complaints received will be requested to forward their concern or complaint direct to the department managing the land. If further requests are made for the City to action, the complaint will be forwarded to the relevant department contact for their action.



12.9 Follow up fire hazard assessments

Bush Fires Act 1954

Part III – Prevention of bush fires

Division 6 – General restrictions, prohibitions and offences

s. 33 (4)(a) – the local government may direct its bush fire control officer, or any other officer of the local government, to enter upon the land of the owner or occupier and to carry out the requisitions of the notice which have not been complied with.

s. 33 (4)(b) – the bush fire control officer or other officer may, in pursuance of the direction, enter upon the land of the owner or occupier with such servants, workman, or contractors, and with such vehicles, machinery, and appliances as he deems fit, and may do such acts, matter and things as may be necessary to carry out the requisitions of the notice

Bush Fires Act 1954

Part III – Prevention of bush fires

Division 6 – General restrictions, prohibitions and offences

s. 33(3). The owner or occupier of land to whom a notice has been given under subsection (1) and who fails or neglects in any respect duly to comply with the requisitions of the notice is guilty of an offence.

Bush Fires (Infringements) Regulations 1978

First Schedule

Item 21

s. 33(3) Failure of owner or occupier of land to comply with a notice requiring him to take action to plough or clear firebreaks or take other action to prevent the outbreak or spread of bush fires

Follow up fire hazard assessments will be conducted after the 14-day timeframe outlined on the work order and the FCO will have the opportunity to take further action on properties still deemed non-compliant by issuing a second work order or infringement. The FCO may also seek approval to proceed to engage contractors. Further action to proceed to prosecution will be determined by the City.

NOTE: Infringements cannot be issued twice, and the next available action should be considered.

Consideration for further action after follow-up assessments will consider the following trigger points to make a fair and consistent decision:

- Are the fire hazards a risk to neighbouring properties?
- Will the fire hazards contribute significantly to the intensity or rate of spread of a fire?
- Has the property been infringed in the first instance?
- Is it visible little to no attempt has been made to comply with the work order under the notice requirements?
- Has the property been non-compliant the previous inspection season and received a work order and/or infringement?
- Are there currently 3 or more non-compliance identified on the property against the notice?

12.9.1 Non-Compliant

An infringement issued by the FCO for non-compliance against the notice will be issued under Section 33(3) of the *Bush Fires (Infringements) Regulations 1978*. A work order will accompany the infringement to ensure the fire hazards are still actioned. If a follow up identifies the property is still non-compliant, a contractor may be engaged by the City and at the property owner and/or occupier's expense, as stated under the *Bush Fires Act 1954s.33(5)*.

12.9.2 Infringement Review

Property owners and/or occupiers that are issued an infringement have the right to have it reviewed and must request the review in writing to enquiries@kalamunda.wa.gov.au.

On completion of the review process the outcome will be communicated to the infringement holder. Infringements withdrawn will be completed by the CRO in community safety.

Infringements that stand may be taken further by the person holding the infringement.

NOTE: All review requests must be made within a 21-day period. Any request for review after the 21-day period will be rejected as it will proceed to FER and out of the City's control.

If a property owner and/or occupier that has received an infringement but has in writing and with sufficient evidence requested assistance regarding payment due to hardship relating to COVID-19, it will be forwarded to senior management for review and approval.

NOTE: The COVID-19 infringement policy is in place to ensure a fair approach is taken.

12.9.3 Contractors

The request to engage contractors to conduct requirements against the work order will be forwarded to senior management for review and decision. If approved, the contractor's invoice will be followed up through the finance team's process. A completion date should follow the same 14-day timeframe for completion with no more than 21 days in total.

12.9.3 Prosecution

Any further action regarding a request for prosecution will be at the discretion and approval of senior management.

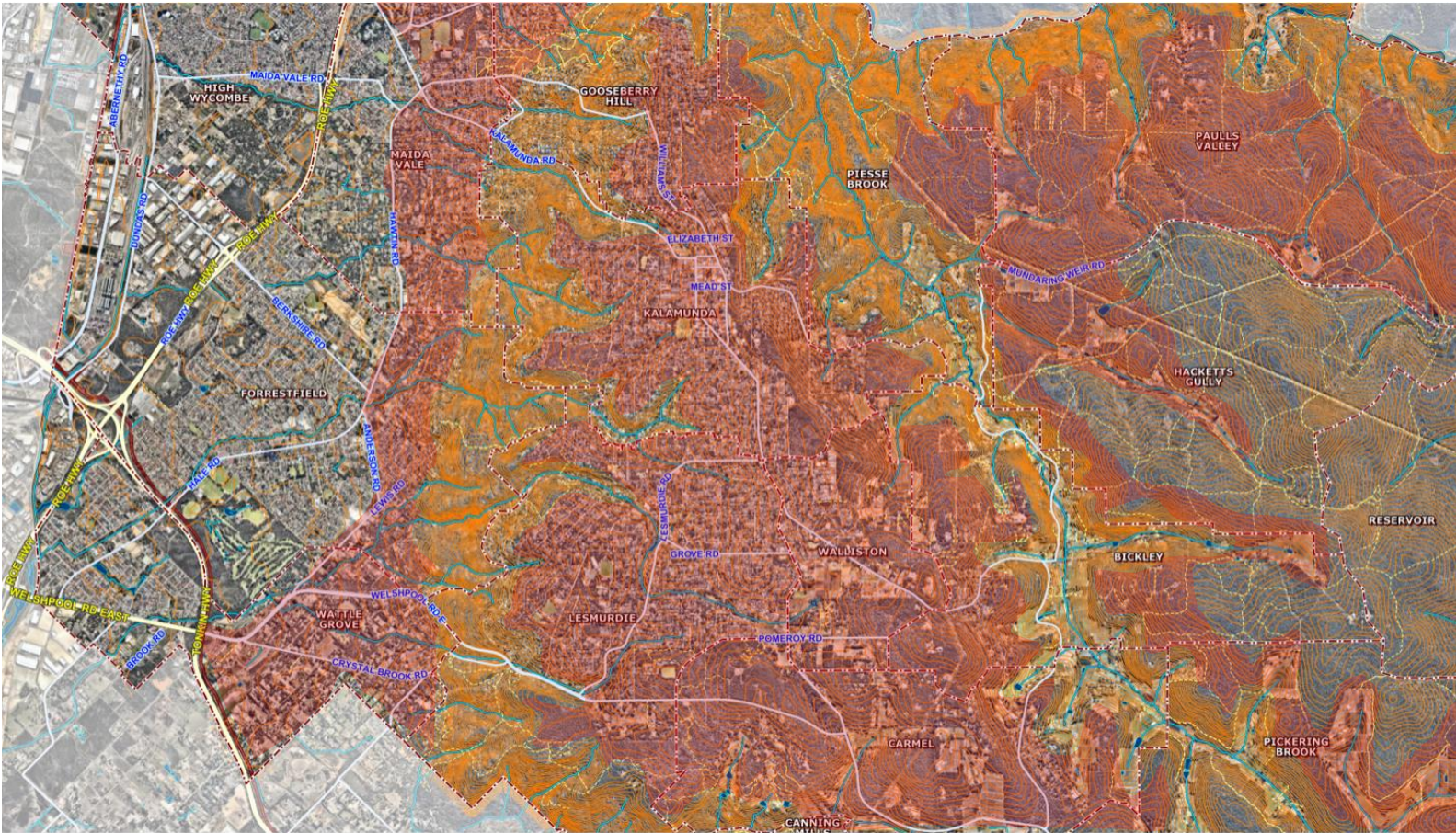
APPENDICES

Appendix 1 – Topography



City of Kalamunda Fire Hazard Assessment Plan 2020/2021
Next review scheduled 2021

**Topography cont'd –
Extreme risk example**



City of Kalamunda Fire Hazard Assessment Plan 2020/2021
Next review scheduled 2021

Appendix 2 – Fire Hazard Reduction Notice breakdown

FIRE BREAKS

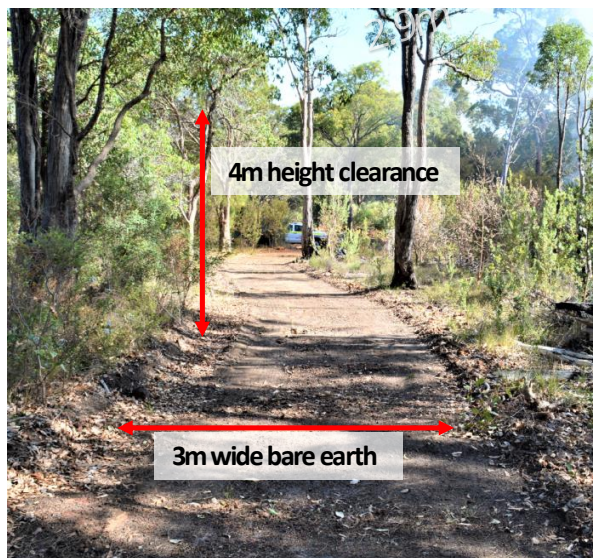
Fire breaks are a common strategy used by both landowners and emergency authorities providing a means of access for large vehicles including firefighting appliances and provide a fuel free area from which prescribed burning can be conducted. When implemented correctly, fire breaks can also provide an effective means for bushfire preparedness and response, as well as a level of protection for life and property.

As per the Notice it is required that landowners install and maintain a 3-metre-wide by 4-metre-high clearance fire break. The break must be bare mineral earth and trafficable for large vehicles and fire appliances.

The objective of fire breaks is to:

- Provide separation from the bushfire hazard to improve firefighter safety when undertaking firefighting operations
- Provide access to the bushfire hazard during emergency response to enable firefighting operations, such as back-burning and fire suppression.

It must be noted that a fire break should not have to exceed 3m and if enquiries for anything larger may be considered as clearing, therefore requiring a permit.



DEAD FLAMMABLE MATERIAL

The importance of minimising fuel loads around assets and throughout properties is fundamental to bushfire survival and preparedness. Landowners are responsible for managing fuel loads on their properties and must keep it down to 8 tonnes per hectare or below. In the APZ a fuel of 2 tonne per hectare or less is required.

As per the Notice landowner are required to manage fuel loads dead flammable material. Leaves, twigs (up to 6mm in diameter) and bark is classes as DFM.

A depth of 15mm or more from the top layer to the mineral earth beneath is indicative of approximately 8 tonne per hectare.

Reducing fuel loads can be conducted in various ways, such as:

- **Hazard reduction burns**
which aims to reduce the amount of surface litter and elevated fuels and is best achieved with by a low intensity (cool) burn.
- **Vegetation modification**
Burning may not always be the best option to reduce fuel loads as burning to frequently can encourage weeds, increasing fire risk. Modification can be more economical and environmentally sustainable and can include:
 - Raking, weed slashing, pruning, ploughing and other mechanical means.



Residents' Fuel Load Depth Gauge Tool Kit



Living in the Shire of Kalamunda is a lifestyle choice that requires a heightened awareness of issues such as bush fires. Reducing fuel loads is a key component of being prepared for such events.

This tool kit has been produced by the Shire of Kalamunda to assist you with measuring the approximate vegetative fuel load across your property.

For more details contact the Shire of Kalamunda on 9257 9999 or go to www.kalamunda.wa.gov.au

Vegetative Fuel Load Depth Gauge

Total Indicative Fuel Load (TIFL) = Litter weight + (Scrub Weight x Scrub Flammability Factor)
How to measure your Total Indicative Fuel Load:

Step 1 - Divide your property into different sections (cells) based on the vegetation variation across your property.

Step 2 - Take three (3) samples in each cell to establish an average fuel load for each cell.

Step 3 - Make a small hole in the leaf litter and remove any coarse material.

Step 4 - Detach ruler and disk from this sheet, then place the 0-mm end of the ruler through the slot above in this disk.

Step 5 - Place the end of the ruler on the soil surface and gently press down on the disk (enough to hold a tennis ball under water).

Step 6 - Read the litter depth from the ruler and use this measurement to determine the litter weight per hectare from table A* in the booklet.

Step 7 - Refer to table B* to determine scrub base weight.

Step 8 - Refer to table C* to determine the most appropriate Scrub Flammability Factor.

* Refer to overside of this disk to view tables A, B and C.

Insert ruler here **CUT INSIDE HERE**



Are you bushfire ready?

PREPARE. ACT. SURVIVE.

9257 9999
www.kalamunda.wa.gov.au

SLASHING

Grass fires can move fast and produce huge amounts of heat. Grasses respond quickly to changes in air moisture where they absorb moisture from damp air overnight and lose moisture very quickly on high fire danger days. This means that grasses can be ready to burn early in the day.

Slashing grasses assists in reducing the full potential that a grass fire will burn. Fire in tall grass will result in high flame heights that may burn across trails, roads, or fire breaks.

Slashing down to a height no greater than 50mm (5cm) is equivalent to roughly 7 tonne per hectare of fuel.

Property owners must slash, mow or trim grass or other flammable material across the entire property 50mm or less.



ASSET PROTECTION ZONE (APZ)

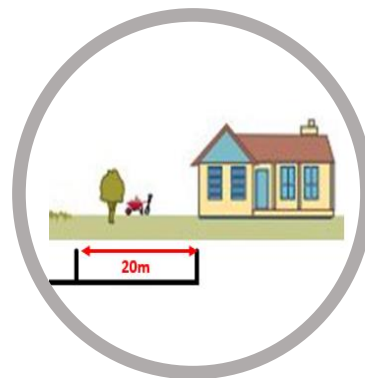
Rural-urban interface is the line, area, or zone where structures and other human development adjoin or overlap with undeveloped bushland. This is where the degree of risk to life and property is most pronounced, and historically where the greatest losses have occurred.

Life and property protection in the urban-rural interface is best achieved through a combination of risk management strategies, such as pruning trees and shrubs, reducing fuel loads and removing any dangerous or flammable materials (eg fuels) from around the asset. It

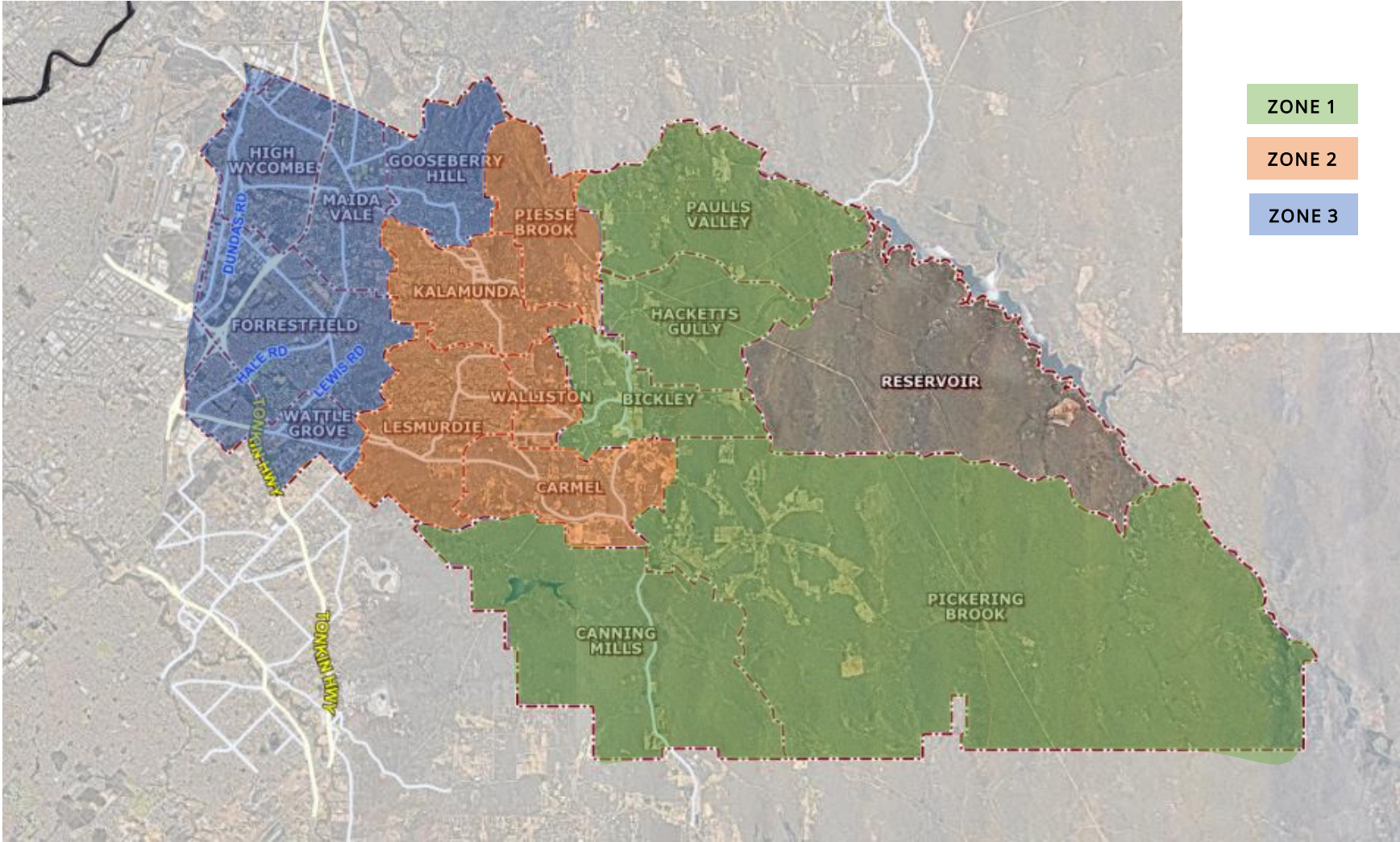
The objectives of an APZ is to:

- Provide separation between buildings and the bushfire hazard to reduce the level of bushfire attack on buildings or other assets
- Minimise the likelihood and impact of direct flame contact, radiant heat, and ember attack in a bushfire

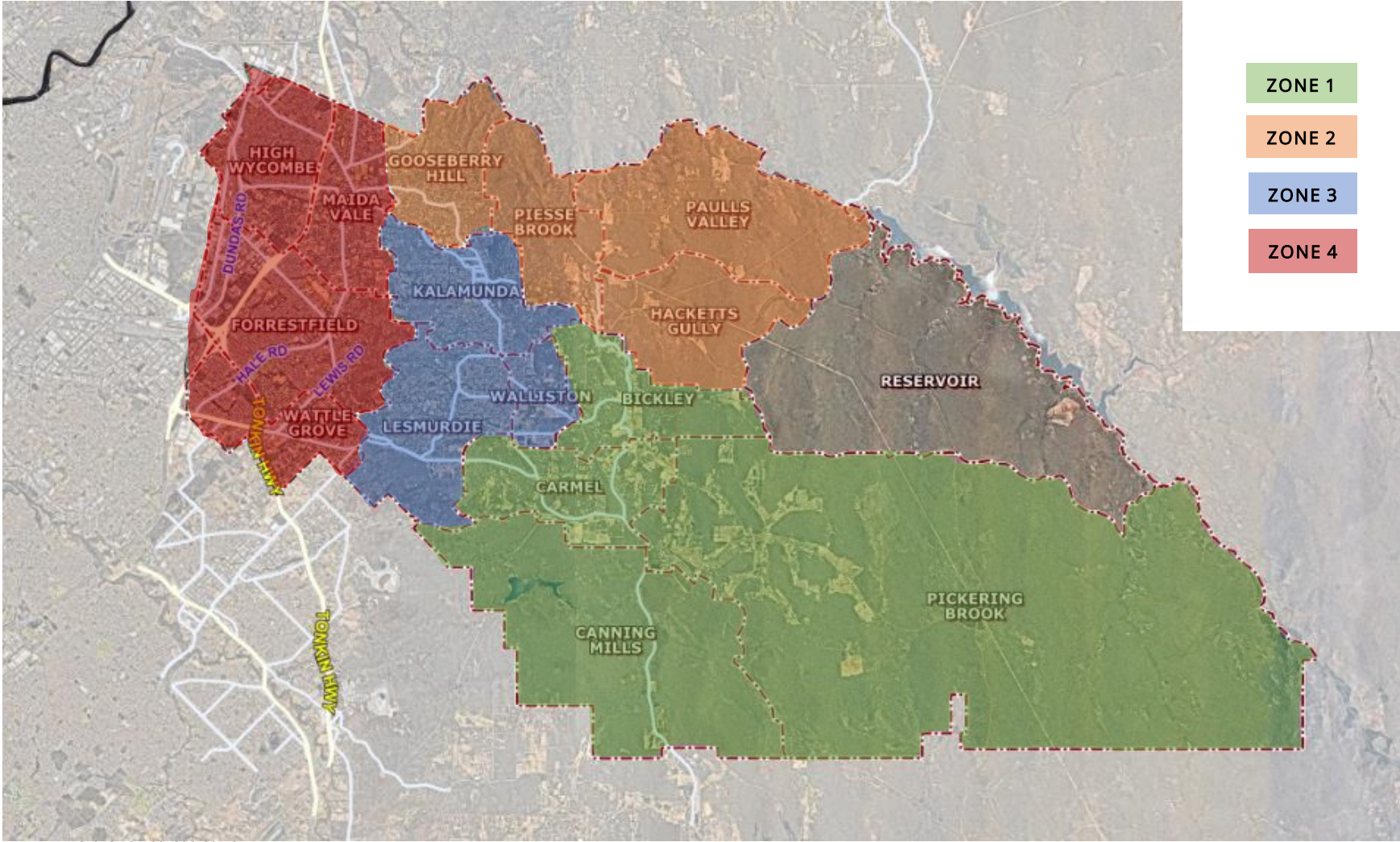
Must extend out 20m from the building or asset with a fuel load of no more than 2 tonne per hectare; and include trees over 5m be under pruned from ground 2m up, trees and shrubs within 2m of asset pruned no higher than 2m



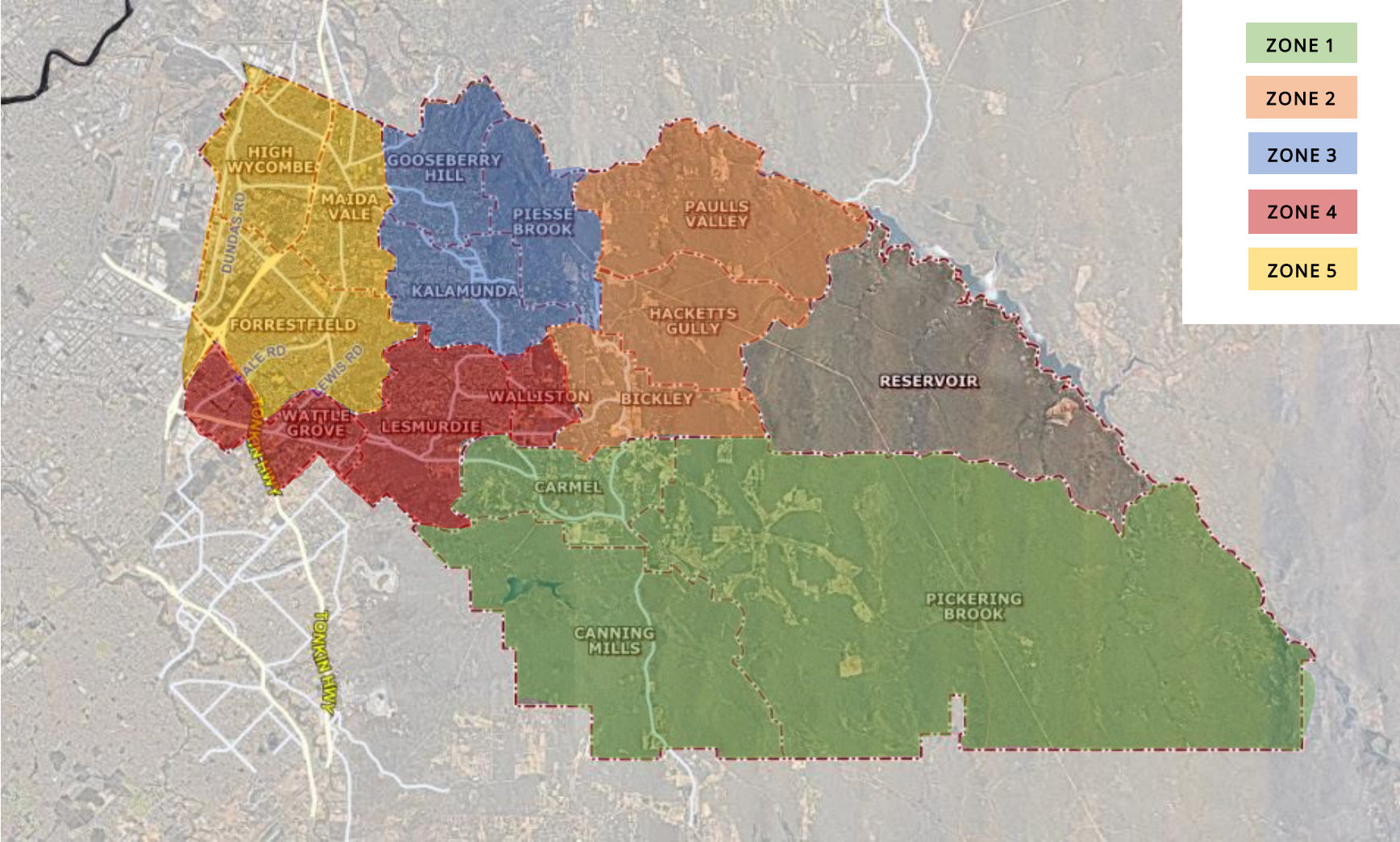
Appendix 3 – Zone Allocation – 3 FCOs



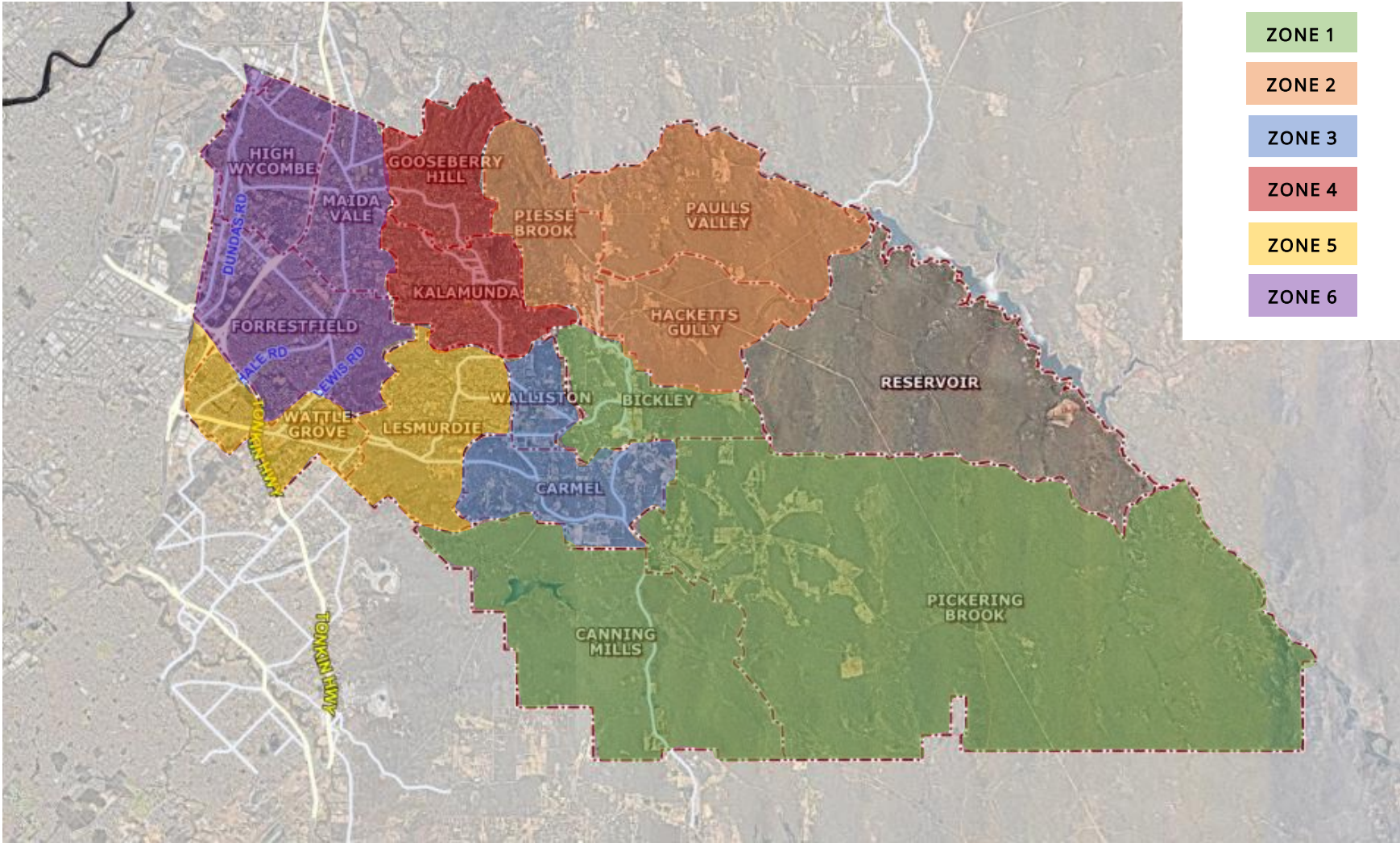
Zone Allocation – 4 FCOs



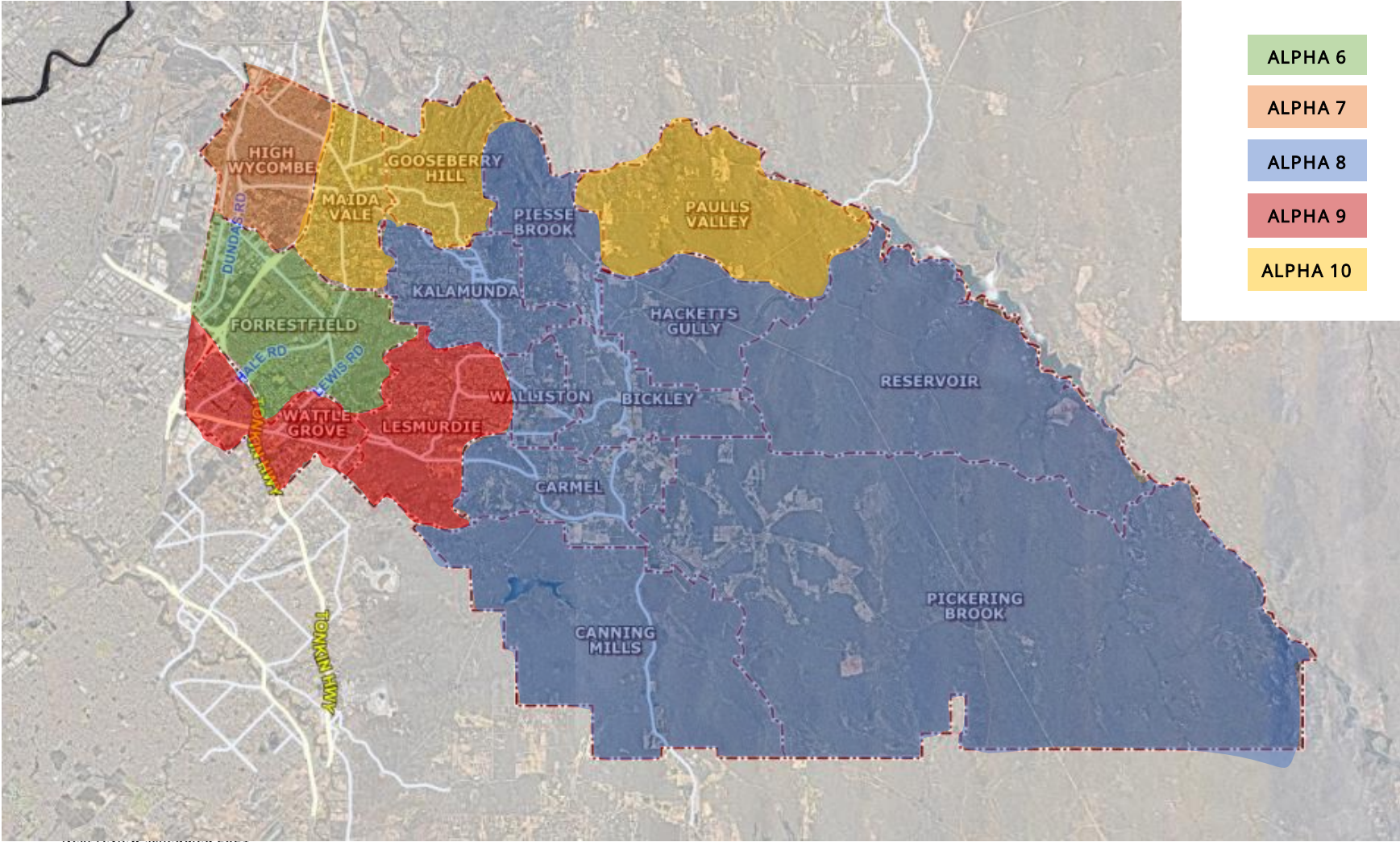
Zone Allocation - 5 FCOs



Zone Allocation – 6 FCOs



Zone Allocation – Rangers



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