

Community Safety –

Fire and Emergency Management

Bushfire Compliance Season Summary Report

2021/2022



Version control of this document is managed by the Fire and Emergency Management team.

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DISCLAIMER

All data and information in this report is provided in good faith and makes no representation or warranty regarding its accuracy, availability, or completeness. This document is not intended to be operational in nature and all agencies are responsible for undertaking prevention, preparedness, response, and recovery plans and/or strategies in their own capacities.

ACKNOWLEDGEMENT

The local government fire season is indicative of the declaration made under sections 17, 18 and 33 of the *Bush Fires Act 1954*, *Bush Fires Regulations 1954*, and all authorisations for local government to modify such dates determined by local conditions. Commonly, fire seasons across the Perth Metropolitan area commence each year from 1 October and conclude 31 May the following year.

The summary acknowledges external agencies that through their media platforms and documentation have contributed to expand the context surrounding the local data captured for the City of Kalamunda.

ACRONYMS & ABBREVIATIONS

AIDR	Australian Institute Disaster Resilience
BNHCRC	Bushfire Natural Hazards Cooperative Research Centre
BoM	Bureau of Meteorology
BRG	Bushfire Ready Group
BRMS	Bushfire Risk Management System
CESM	Community Emergency Services Manager
COVID 19	Coronavirus Disease 2019
CSIRO	Commonwealth Scientific and Industrial Research
DFES	Department of Fire and Emergency Services
EM	Emergency Management
FDR	Fire Danger Rating
KBDI	Keech Byram Drought Index
NERAG	National Emergency Risk Assessment Guidelines
PPRR	Prevention, Preparedness, Response and Recovery
PR	Public Relations
SDI	Soil Dryness Index

SUPPORTING MATERIAL

2021/2022 Fire Hazard Assessment Plan
2021/2022 Fire Hazard Reduction Notice
Kalamunda Bushfire Community Engagement & Communication Plan 2021/2022
City of Kalamunda Advancing Community Strategies
City of Kalamunda Risk Matrix 2019
Department of Fire and Emergency Services
Bureau of Meteorology
Emergency WA
Australian Disaster Resilience Knowledge Hub
CSIRO
Bushfire Natural Hazards CRC
<i>Bush Fires Act 1954 & Bush Fires Regulations 1954</i>

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Table 6	Total work orders issued for Notice requirements by property size across the Eastern Rural District, Escarpment, and the Foothills.

PURPOSE

The purpose of this report is to provide a comprehensive summary of the City of Kalamunda's (the City) bushfire compliance outcomes from 1 October 2021 to 31 May 2022 (the fire season). This report was developed to expand on the City's prior documentation by including all elements of bushfire compliance and efforts toward bushfire preparedness.

SCOPE

The report will refer to specific data collected from the City's internal corporate systems for the following.

1. Permits to burn.
2. Illegal burns.
3. Fire hazard assessments.

AIM

This report aims to analyse the data collected throughout the local 2021/2022 bushfire season to develop stronger engagement plans, more targeted communication strategies, and to review compliance procedures under the authority of the *Bush Fires Act 1954* (the Act) and *Bush Fires Regulations 1954*. The report will also provide the City valuable information to assist with reviewing processes and working through a process of continuous improvement.

CONTEXT

The report has been developed to align with the City's strategic objectives (table 1) along with the 2019 Lesson Management Cycle produced by the Australian Institute for Disaster Resilience (figure 1).

PRIORITY 1: Kalamunda Cares and Interacts		
Objectives	Strategies	Success Management
1.1 To be a community that advocates, facilitates, and provides quality lifestyles choices.	1.1.1 Facilitate the inclusion of the ageing population and people with disability to have access to information, facilities, and services.	<ul style="list-style-type: none"> • Increase number of community education events.
	1.1.2 Empower, support, and engage and with young people, families, and our culturally diverse community.	
1.2 To provide safe and healthy environments for community to enjoy.	1.2.1 Facilitate a safe community environment.	<ul style="list-style-type: none"> • Increasing community perception of safety in the City. • Increasing compliance with fire protection requirements. • Increasing level of satisfaction with programs, facilities, and activities.

PRIORITY 4: Kalamunda leads		
Objectives	Strategies	Success Management
4.1 To provide leadership through transparent governance.	4.1.1 Provide good governance	<ul style="list-style-type: none"> • Level of compliance with legislation. • Increasing satisfaction with community engagement activities. • Level of external funding acquired.
4.2 To proactively engage and partner for the benefit of community.	4.2.1 Actively engage with the community in innovative ways.	
	4.2.2 Increase advocacy activities and develop partnerships to support growth and reputation.	

Table 1: Kalamunda Advancing 2027 Strategic community plan objectives.



Figure 1: Lessons management cycle (AIDR, 2019).

Risk management as defined by the Australian Institute of Disaster (1998) involves the application of policies, procedures and practices that assist in analysing, evaluating, treating, and monitoring risk. In an environment full of uncertainty managing risk assists all agencies to identify and protect what people and communities' value.

The context of risk assessment in this report aligns with the National Emergency Risk Assessment Guidelines (NERAG) ISO 31000:2018 and the City's risk matrix (figure 2) and is scaled to the consequences and likelihoods relevant to the City's administrative and operational capacity. It also includes the risk of impact directly to people and community aligning with DFES's strategic control priorities 2016-2028. These are:

1. Protection and preservation of life.
2. Community warnings and information.
3. Protection of critical infrastructure and community assets.
4. Protection of residential property.
5. Protection of assets supporting individual livelihood and community financial sustainability.
6. Protection of environmental and heritage values.

Audit & Risk Committee Meeting - 19 March 2019 Attachments
Risk Matrix

Attachment 9.1.4.3

CITY OF KALAMUNDA RISK MATRIX 2019

CONSEQUENCE							LIKELIHOOD					
							< once in 15 years	At least once in 10 years	At least once in 3 years	At least once per year	More than once per year	
Financial	Health & Safety	Reputation	Operation	Environment	Compliance	Project	Severity	Rare	Unlikely	Possible	Likely	Almost Certain
							E	D	C	B	A	
>\$1M	Fatality or permanent disabling injuries or illness	Substantiated, public embarrassment, very high multiple impacts, high widespread multiple news profile, third party actions	Non-achievement of major deliverables	Major breach of legislation or extensive contamination and environmental damage requiring third party intervention	Breach resulting in external investigation or third party actions resulting in significant tangible loss and damage to reputation	>50% increase in cost or timeline, or inability to meet project objectives requiring the project to be abandoned or redeveloped	Critical	Medium	High	High	Extreme	Extreme
\$500,000 - \$1M	Serious irreversible injuries or illness	Substantiated, organisational embarrassment, high impact news profile, third party actions	Non-achievement of major deliverables	Minor Breach of legislation / significant contamination or damage requiring third party assistance	Breach resulting in external investigation or third party actions resulting in tangible loss and some damage to reputation	20 – 50 % increase in time or cost or significant variation to scope or objective requiring restructure of project and Senior Management or Council approval	Major	Low	Medium	High	Extreme	Extreme
\$100,000 - \$500,000	Injuries or illness that could lead to a Lost Time Injury	Substantiated, public embarrassment, moderate news profile	Significant delays to major deliverables	Environmental damage requiring restitution or internal clean up	Breach requiring internal investigation, treatment or moderate damage control	10-20 % increase in time or cost or variation to scope or objective requiring Senior Management approval	Significant	Low	Medium	High	High	High
\$10,000 - \$100,000	Medical treatment injury or illness	Substantiated, low impact, low news item	Inconvenient delays	Minor damage or contamination	Breach of policy, process or legislative requirement requiring attention of minimal damage control	5-10% increase in time or cost or variation to scope or objective requiring managers approval	Moderate	Low	Low	Medium	Medium	High
< \$10,000	First aid treatment injury or illness	Unsubstantiated, low impact, low profile or "no news" item	Little impact	Little impact	Minor breach of policy, or process requiring approval or variance	Small variation to cost, timelines, scope or quality of objectives and required outcomes	Insignificant	Low	Low	Low	Low	Medium

City of Kalamunda 48

Figure 2: City of Kalamunda Risk Matrix 2019.

The risks in this report are focused on bushfire; one of the City's highest risks to its community. The assessments provided in this report will identify current and emerging hazards allowing for organisational growth and improvement, particularly where preservation of life is a critical objective.

EXECUTIVE SUMMARY

This report covers the City's bush fire compliance outcomes including achievements, limitations, and recommendations. This report will also summarise local conditions experienced that impacted on compliance duties such as permits to burn and fire hazard assessments.

The 2021/2022 local bushfire compliance season was a considerable improvement on the previous 2020/2021 season. It resulted in greater compliance outcomes and bushfire safety across permits, communications, fire hazard assessments and illegal burning activity (indicative of reported burns to a City Fire Control Officer).

The season adjusted strategies to assist in improving its capability across bushfire safety and compliance. The City successfully provided and executed the Bushfire Community Engagement and Communication Plan. This plan was developed to enhance education and awareness toward bushfire preparedness and can be reviewed in the Community Engagement Report.

The fire hazard assessment application Zoodata was further developed resulting in significant improvement in evidence gathering and general functionality for fire hazard assessments. Officer training refresher modules and field guides were also introduced.

PERMITS TO BURN

Bushfire safety improvements in relation to permits to burn shows a 28.4% decrease (excluding City and State land) compared to last season. This may have been contributed to the weather experience this season impacting landowners' ability to reduce fuel loads to improve property preparedness. Majority of permits were issued at the commencement of the restricted period with 93 permits issued across October and November 2021. Bickley, Carmel, Piesse Brook and Forrestfield were recorded with the most permits shown.

ILLEGAL BURNS

Majority of illegal burning activity occurred in the escarpment. High Wycombe reported the most increase in breaches.

50% of all illegal burns were a result of failing to obtain a burning permit, therefore these areas will be considered for a more targeted engagement approach in burning requirements and bushfire safety.

The City also improved its collaboration and communication with local fire brigades offering field books to aid volunteers in gathering evidence on illegal burning activity to provide back to the City for follow-up compliance, particularly around repeat offenders.

FIRE HAZARD REDUCTION NOTICE

The Fire Hazard Reduction Notice (the Notice) this season received an update to its design, aiming to improve its readability.

VARIATIONS

A requirement of the Notice is to have variations submitted prior to 1 October in preparation for the start of assessments that commence from 1 November. 136 applications were received and approved, an improvement of almost 16% on last season.

FIRE HAZARD ASSESSMENTS

Fire hazard assessments also achieved significant outcomes with 3779 properties assessed and a compliant result of 2777 properties: a 3.75% increase from last season. This was largely due to the Zoodata assessment application and its increased stability.

During fire hazard assessments, 2.91% (110 of 3779 assessments) of those properties were inaccessible due to locked gates or other access restrictions, however just over 1% (2 of the 110 inaccessible) of these properties remained inaccessible and did not receive an assessment.

WORK ORDERS

Assessment outcomes indicated across section 4, Figure 15, how 893 work orders were issued: a decline of 17.7% from last season.

With the increase of follow up assessments completed, 105 work orders remained outstanding (not followed up) at the season's conclusion compared to 325 from last season. This is another improvement of 32.3%. The majority of work orders issued, as seen in Table 4, and comparative to the total properties assessed, were across the foothills. The total of work orders visible in Table 6 indicates residents were non-compliant with the requirements for dead grasses, fire breaks and additional works.

ENFORCEMENT

For Fire Hazard Assessments, enforcement measures took place majority of the time after a follow up assessment was conducted with 81 infringements being issued as a result. This is a 2.4% decrease due to the increased amount of follow up assessments conducted outlined in Figure 15.

The City engaged 2 mitigation contractors to install and upgrade fire breaks. One property located in Paulls Valley has recorded 4 seasons of non-compliance against the Notice with a risk rating under the Bushfire Risk Management System (BRMS) of extreme, action was required. Fire breaks are required for access, for the ability to conduct safe firefighting operations and can in some conditions slow the rate of spread of bushfires. It was therefore considered important that upgrading and installing fire breaks on this property. The second property was in Wattle Grove which also had several years of non-compliance.

The City actioned four prosecution cases this year. One has resulted in a successful prosecution where significant penalties were applied \$4000 plus \$1,417 in costs awarded in favour of the City. The three other cases are still before the courts and are expected to be finalised later in the calendar year.

FIRE HAZARD REDUCTION NOTICE

The Fire Hazard Reduction Notice (the Notice) is reviewed, Gazetted in the Government Gazette and sent out with the rates each year. A copy of the Notice is also available on the City's website, at City libraries and publish in the local newspapers. City Fire Control Officers also leave a copy with their door hangers if they attend a property if no one is in attendance at the time of inspection.

ORDINARY COUNCIL MEETING

At the City of Kalamunda's Ordinary Council Meeting held on 12 October 2021, the City's Council considered a petition formally requesting the Council to commission an audit of the City's Bushfire Hazard Mitigation Program. The City's Council resolved as following in response to the petition:

That Council:

1. NOTE the petition.
2. NOT SUPPORT the request to undertake an audit.
3. REQUEST the Chief Executive Officer to issue correspondence to all those that signed the petition requesting their written feedback and suggestions regarding the City of Kalamunda Fire Hazard Reduction Plan and inspection process.

In response to Point 3, the Council gave the opportunity to the residents who signed the petition to offer further feedback regarding their experiences with the inspection process and to provide feedback to the City for future Fire Hazard Reduction Plans and inspection process. The City received 1 reply.

Minimal community feedback was provided, the City acknowledges this feedback and can advise;

Create a positive community attitude towards the Program –

The City continues engaging with the community through community engagement and communication plans and reviews its plan each year based on community feedback and the changing climate. Notices are delivered in line with the relevant legislation.

FCOs should have some practical experience and knowledge –

The City employs full time experienced Community Safety Officers with a wealth of knowledge in a range of prerequisite qualifications which includes Fire Control. Newly appointed Fire Control Officers are appointed on a contracted basis for the duration of the fire inspection period each year. All applicants are required to possess the relevant skills and experience in fire control and compliance to be allegeable to apply.

Applicants are then subjected to an interview process. The successful applicants are then put through a comprehensive training program which provided further local training on the City's Plans and approach to the fire hazard inspection program prior to the commencement of the program.

Body cameras -

Body cameras are used in line with the Surveillance Devices Act 1998 (WA)

Provide a year-round advisory service -

City FCOs are available all year round to provide advice on private property bushfires and storm preparedness.

Involve residents in program planning -

The City engages with the community each year and seeks feedback which informs future plans and engagement strategies

Reduce bushfire hazards on land for which the City is responsible -

The City's Fire Mitigation team conduct regular fire hazard risk assessments on City owned or managed land throughout the year. Mitigation works are carried out on identified land reflective of the risk easement ratings.

Private Contractors information -

Previously the City has supplied a list of contractors who specialise in fire compliance work, however, due to a number of issues the City stopped providing the list. As a result of community feedback, a new private contractor list has been established to assist private landowners/occupiers to meet their obligations under the Notice.

SEASONAL WEATHER CONDITIONS

Property preparedness activities were affected by the continuous rainfall that the Perth Metro area experienced. In spring 2021, 150.6 mm of rain was recorded making it the wettest period since 1996. The rain had affected landowners' ability to burn off and hindered firebreak preparedness activities.

The Greater Perth Metro area was the hottest summer on record in terms of maximum temperatures. Perth had a maximum temperature of 40°C 13 times. December and January having 5 and 6 days respectively. February had 2 days.

28 December 2021 ended a record of 4 days of consecutive days over 40°C, this is an equal record for December. January posted 6 days over 40°C consecutively ending on 23 January. The hottest day this summer was 26 December recording 43.5 °C.

The hot weather hindered inspection activity which contributed to the lower number of properties being inspected this year. Officers were required to work to the conditions, managing heat stress and vehicle movement restrictions.

The Autumn restricted burning period was also affected as the Perth metro area was coming off the hottest summer on record. Permits were not able to be issued until very late May.

Bickley SDI

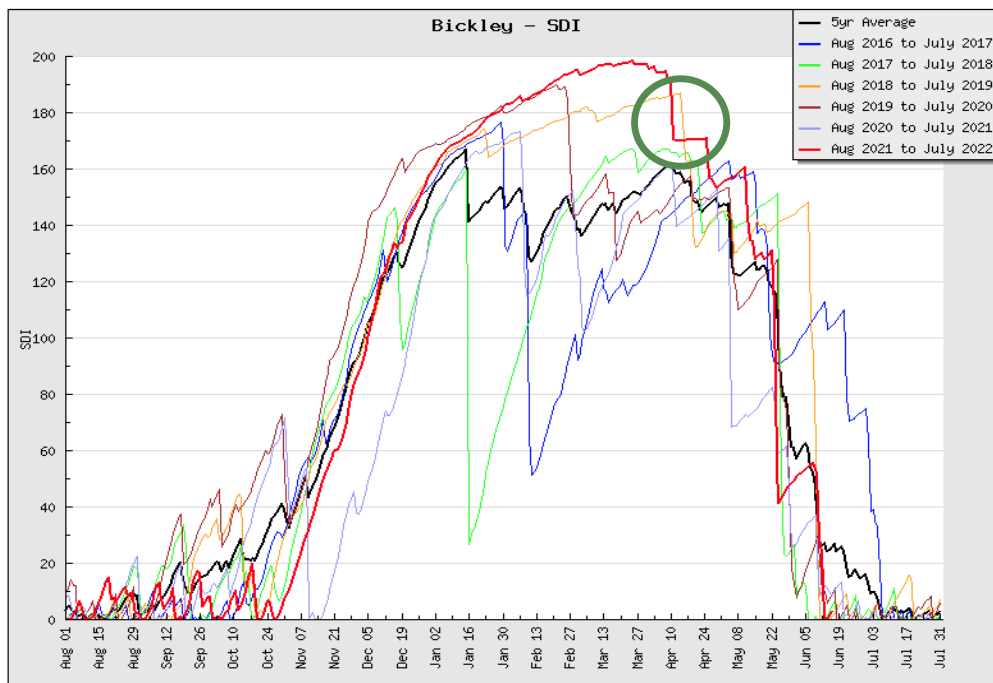


Figure 3: Soil Dryness Index (SDI) comparative to the 5 years average (BoM 2022)

KEY RECOMMENDATIONS

1. Improving community engagement for targeted areas including messaging and events.
2. Increased training period for newly recruited staff over the bushfire season with particular focus on fire hazard assessments. This can allow time for more practical exposure in communication, customer service and engagement with residents and local knowledge.

3. Continuous review and risk assessment on processes, plans, policies, and strategies for bushfire compliance.

1. COMMUNITY ENGAGEMENT

1.1 Summary/background

The City's bushfire engagement and communication plan were developed and facilitated in collaboration with the City's PR and Customer Relations team. Several events were planned across September and October providing all residents with the opportunity to improve, learn and build on existing knowledge of bushfire preparedness including requirements under the Fire Hazard Reduction Notice.

The following stakeholders were involved in local engagement presentations, attendance, support, and planning.

1. DFES staff.
2. City of Kalamunda Fire Officers.
3. Bushfire Ready Group coordinators.
4. Kalamunda Volunteer Bushfire Brigade members.
5. Kalamunda Volunteer Fire and Rescue Service members.
6. Welshpool and Midland Fire and Rescue Service

Several face-to-face events were held across the City targeting property preparedness, personal preparedness and burning education.

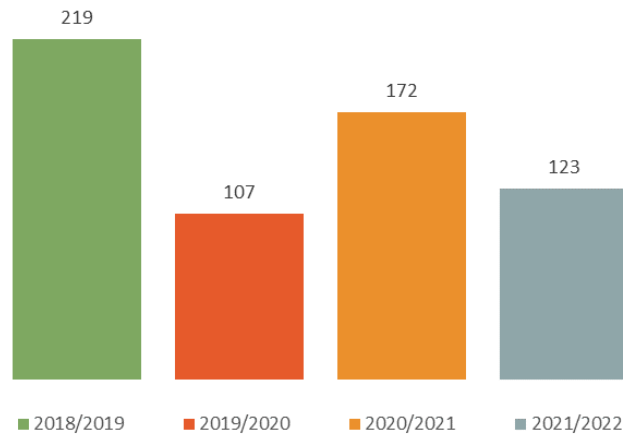
Outcomes from the 2021/2022 bushfire community engagement and communication plan can be reviewed in the subsequent summary report.

A letter drop was done to 1800 properties in the Foothills offering a property walkthrough to assist in bushfire preparedness. Just over 70 residents took up the offer.

2. PERMITS TO BURN

2.1 Outcomes

This section is reflective of the restricted burning period that commenced from 1 October 2021 to 30 November 2021 and commenced again from 1 April 2022 until 31 May 2022. Figure 4 gives a comparison to the previous three restrictive burning period fire seasons.



Restricted Burning Period	2018/2019	2019/2020	2020/2021	2021/2022
October	93	54	79	62
November	32	10	44	31
April	28	0	22	2
May	66	43	27	28

Figure 4: Graph showing total permits to burn issued (excluding City and State land). The table displays total permits to burn issued across the restricted burning period.

1. 123 permits were issued across the restricted burning period (28.4% decrease).
2. Issuing permits to burn was delayed until 3 May 2022 due to soil dryness conditions and dry weather. (Residents could still burn 1m³ pile from 6 pm to 11 pm full extinguished by Midnight)
3. The majority of permits issued were across Bickley, Carmel, Piesse Brook and Forrestfield (Figure 5).
4. Maida Vale looks to be maintaining a steady trend in permit burning activity.
5. Forrestfield looks to be increasing its permit burning activity.
6. It is unknown how many 1m³ pile burns occurred between 6 pm to 11 pm, contributing further to fuel load management as permits are not required in this instance.



Figure 5: Permits to burn issued across the Eastern Rural District, Escarpment and Foothills.

2.2 Recommendations and Risk Assessments

This data identifies a need to provide continuing education and awareness of bushfire safety, property preparedness and permit regulations and requirements to all residents, with a targeted approach to those areas that display an increase in burning activity. This can be achieved through collaboration with the City's Public Relations and Customer Relations team to continually develop the Bushfire Engagement and Communication Plan. It is also recommended that continuous skill refreshers and training modules be developed and made available to the City's fire officers to ensure currency and competency of skills and knowledge surrounding bushfire compliance.

HAZARD/RISK			
City fire officers fail to assess burn piles prior to issuing a permit resulting in rubbish and other toxic materials being burnt by residents.			
	UNTREATED RISK		
	Consequence	Likelihood	Rating
Health & Safety	Significant	Likely	High
Reputation	Significant	Almost certain	High
Environment	Significant	Likely	High
Compliance	Significant	Likely	High

TREATMENTS

1. Local information guide on permits that includes what can and cannot be burnt to be handed out with permits.
2. All burn piles prior to issuing a permit continue to be assessed to ensure materials not permitted to be burnt are removed.
3. Permits are not issued until compliance is achieved as per the *Bush Fire Regulations 1954*
4. Permits are not issued until all additional requirements are put in place and approved by the fire officer.
5. Permit requests continue to be logged in the internal records systems and followed up by an officer to organise a time for burn pile assessment.
6. Processes are reviewed and maintained prior to and after each burning permit season.
7. Consider the implementation of capturing photos and assessment outcomes from a portable device while on site to improve evidence gathering methods.
8. r.15B under the *Bush Fires Regulations 1954* are printed on the back of every permit issued by an authorised City fire officer.

TREATED RISK

	Consequence	Likelihood	Rating
Health & Safety	Significant	Unlikely	Medium
Reputation	Moderate	Unlikely	Low
Environment	Significant	Unlikely	Medium
Compliance	Moderate	Unlikely	Low

HAZARD/RISK			
Permits to burn are obtained online only resulting in no pile assessment, no fire officer consultation and full reliance on community self-compliance.			
UNTREATED RISK			
	Consequence	Likelihood	Rating
Health & Safety	Critical	Possible	High
Reputation	Major	Likely	Extreme
Environment	Critical	Likely	Extreme
Compliance	Significant	Likely	High

TREATMENTS

1. The process is in place for all burn piles to be assessed by a City Fire officer before the permit is issued.
2. Process is reviewed prior to and after each bushfire season with any updates communicated to all community safety staff.
3. Provide refresher training for staff on permits and fire behaviour to improve and maintain confidence in issuing permits.
4. Permits to burn garden refuse are issued by City Fire Officers and Rangers in compliance with r.15B of the *Bush Fires Regulations 1954*.
5. Regulation 15B of the *Bush Fires Regulations 1954* is printed on the back of every permit issued by an authorised City fire officer.
6. Running fire permits are issued by the Chief Bushfire Control Officer or their delegate for the management of additional risk.
7. Develop an online application form that registers the interest in obtaining a permit, aiding residents that may be time poor to call and enabling a faster turnover for fire officer communications.

TREATED RISK			
	Consequence	Likelihood	Rating
Health & Safety	Moderate	Rare	Low

Reputation	Moderate	Unlikely	Low
Environment	Significant	Unlikely	Medium
Compliance	Moderate	Unlikely	Low

HAZARD/RISK			
No plans, reviews or provisions are provided toward community safety education and awareness on conducting burning activities.			
	UNTREATED RISK		
	Consequence	Likelihood	Rating
Reputation	Major	Likely	Extreme
Operation	Major	Likely	Extreme

TREATMENTS

1. Improve education on fire behaviour and managing fires through live demonstrations and workshops.
2. Develop information sheets/guides that are available online and at engagement events to outline the importance of following burning conditions.
3. Improve education on fire behaviour and managing fires through online available videos.
4. Review website content as required to ensure current information on burning dates and applying for permits is available.
5. Officers when engaging with residents provide both verbal education and literature on the requirements.
6. Collaborate with PR SMEs to develop a comprehensive communication and engagement plan for bushfire communication and engagement strategies.

	TREATED RISK		
	Consequence	Likelihood	Rating
Reputation	Significant	Unlikely	Medium
Operation	Moderate	Rare	Low

3. ILLEGAL BURNS

3.1 Outcomes

The following data on illegal burns is indicative only of the incidents that have been directly reported to the City during operating hours either by the local fire brigade or residents. The data presented does not represent all fires that have occurred within the City. This information can be obtained if applicable or as required from DFES.

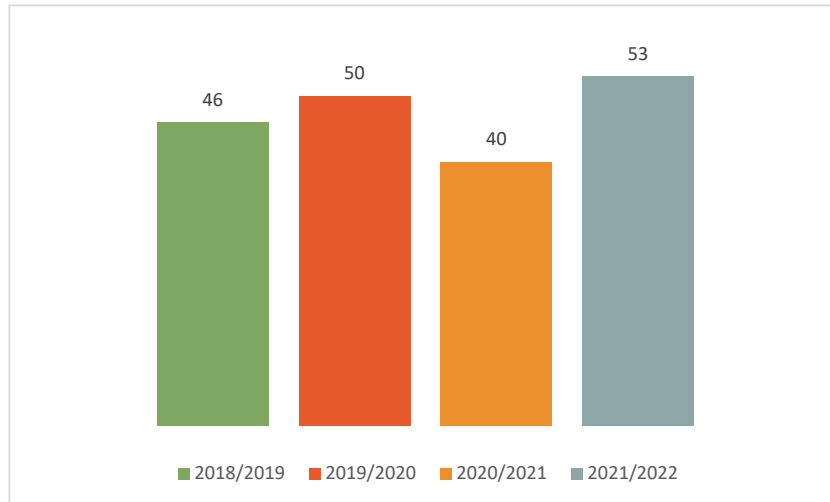


Figure 6: Total illegal private property burns reported and attended by a City Fire Control Officer.

		2018/2019	2019/2020	2020/2021	2021/2022
Restricted Burning period	October	6	6	7	18
	November	9	5	6	5
Prohibited Burning Period	December	6	1	4	3
	January	4	0	1	3
	February	3	1	3	1
	March	3	2	3	5
Restricted Burning Period	April	8	12	8	14
	May	7	23	8	12

Table 2: Total illegal private property burns reported and attended to across restricted and prohibited burning periods.

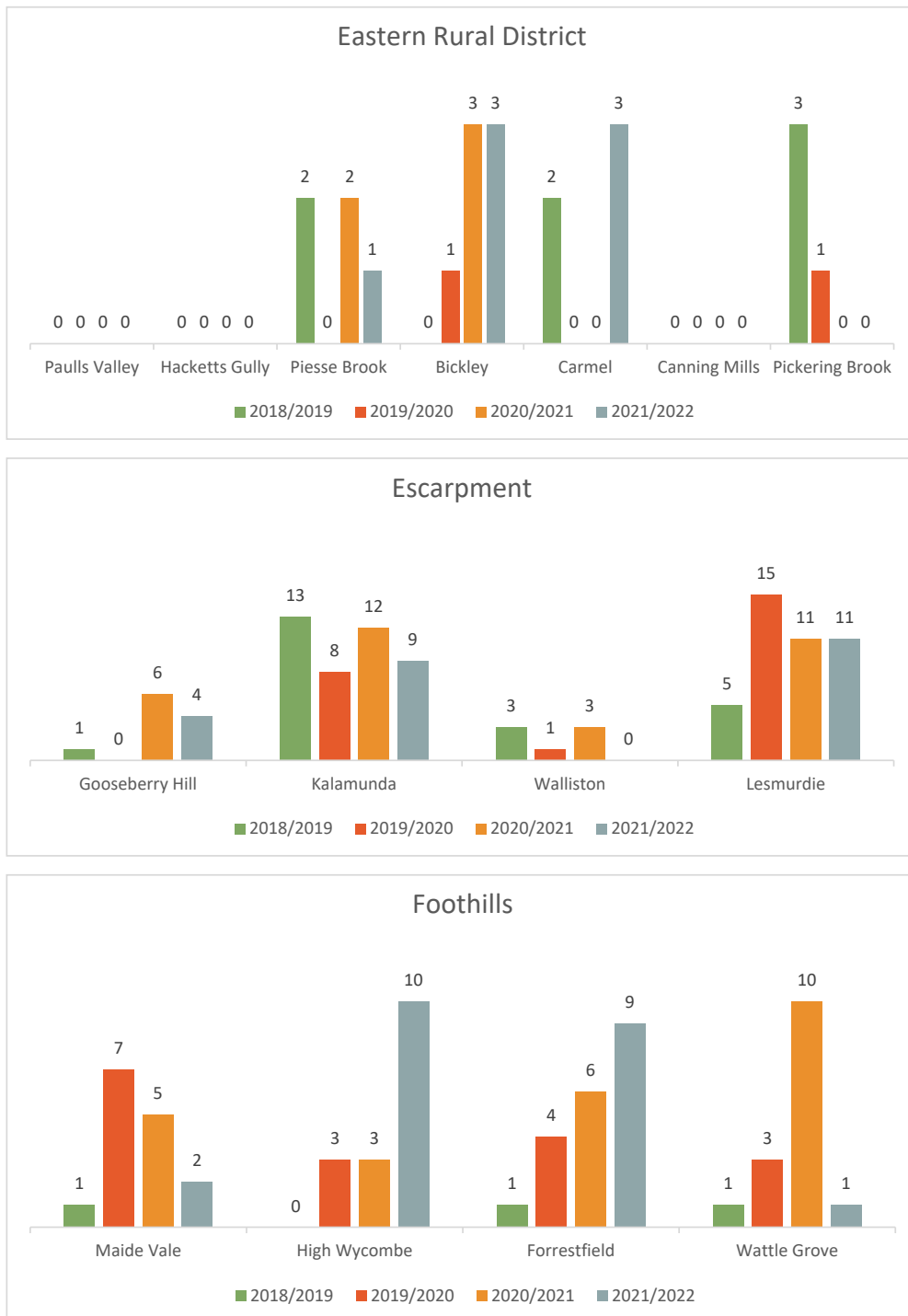


Figure 7: Illegal private property burn reported and attended to across the Eastern Rural District, Escarpment, and the Foothills.

1. 53 illegal burns were reported and attended to by City Fire Officers an increase of 13 from last season.
2. One illegal burn occurred on a declared Total Fire Ban and resulted in an infringement for burning and caution for obstruction.
3. Over half of the Illegal burning activity occurred in the Escarpment.
4. 9 infringements and 21 cautions were issued throughout the season with most relating to the following: OFFENCES RELATING TO BURNING OF BUSH
5. Wattle Grove looks to be decreasing in burning offences. This may correlate with the level of property preparedness and bushfire safety awareness education from the Street Meet event held in October.
6. High Wycombe and Forrestfield show an increasing trend in their burning activity over this period resulting in breaches (Figure 7) under the *Bush Fires Act 1954* and *Bush Fires Regulations 1954*.
7. It is predicted that future data will show a continuing downward trend as more illegal burning activity is being captured in the City's system, and the community become more educated in responsible for fire management.

3.2 Recommendations and Risk Assessments

The impact of illegal burning activity can lead to, burns escaping, causing property damage, environmental damage, personal impacts and in some instances result in major bushfires. It is therefore important that measures are taken to reduce the risk of complacency, disregard for safety or ongoing limited awareness and understanding of the impacts a bushfire can have.

It is critical that the City continues to provide education and awareness of bushfire safety, property preparedness and burning requirements to all residents with a targeted approach to those areas that display an increase in illegal burning activity. This can be achieved through collaboration with the City's PR and Customer Relations team to continually develop the Bushfire Engagement and Communication Plan, along with building strong relationships with the local fire brigades. It is also recommended that continuous skill refreshers and training modules are reviewed and made available to the City's fire officers to ensure currency and competency of skills and knowledge surrounding bushfire safety and compliance.

HAZARD/RISK			
The City fails to deploy enforcement actions when attending private property burns that breach the <i>Bush Fires Act 1954</i> and <i>Bush Fires Regulations 1954</i> .			
	UNTREATED RISK		
	Consequence	Likelihood	Rating
Reputation	Significant	Possible	High
Operation	Major	Almost certain	Extreme
Environment	Critical	Likely	Extreme
Compliance	Significant	Almost certain	High

TREATMENTS

1. Officer training is provided and refreshed prior to commencing the bushfire season. Ensuring understanding and correct application of enforcement.
2. Review policies and processes for enforcement.
3. Capture evidence that assists in determining enforcement and education outcomes.
4. Authorise City officers under the *Bush Fires Act 1954* and *Bush Fires regulations 1954*.
5. Develop strong, positive relationships with the local fire brigades that will aid in information and evidence sharing to conduct appropriate enforcement actions.

	TREATED RISK		
	Consequence	Likelihood	Rating
Reputation	Significant	Unlikely	Low
Operation	Moderate	Unlikely	Low
Environment	Significant	Unlikely	Medium
Compliance	Moderate	Unlikely	Low

HAZARD/RISK

Unnecessary use of fire brigade resources and time due to City inaction toward compliance and education.			
	UNTREATED RISK		
	Consequence	Likelihood	Rating
Financial	Moderate	Almost certain	High
Health & Safety	Significant	Likely	High
Reputation	Moderate	Likely	Medium

TREATMENTS

1. Develop a community engagement and communication plan that encourages education on fire behaviour.
2. Establish clear processes for City Fire Officers when attending illegal burns and when to request the fire brigades.
3. Collaborate with local fire brigades on repeat offenders they attend and requests for City officers.
4. Authorise City Fire Officers under the *Bush Fires Act 1954* and *Bush Fires Regulations 1954*.

	TREATED RISK		
	Consequence	Likelihood	Rating
Financial	Insignificant	Likely	Low
Health & Safety	Insignificant	Likely	Low
Reputation	Moderate	Unlikely	Low

HAZARD/RISK			
Escaped burns damage the surrounding infrastructure, environment and/or people resulting in increased expenditure of repairs, welfare, PPE, maintenance, BCP impacts etc.			
	UNTREATED RISK		
	Consequence	Likelihood	Rating
Financial	Critical	Likely	Extreme
Health & Safety	Critical	Likely	Extreme
Reputation	Major	Likely	Extreme
Operation	Significant	Likely	High
Environment	Critical	Likely	Extreme
Compliance	Significant	Likely	High

TREATMENTS

1. Officer training is provided and refreshed prior to commencing the bushfire season. Ensuring understanding and correct application of enforcement.
2. Review policies and processes for enforcement.
3. Capture evidence that assists in determining enforcement and education outcomes.
4. Authorise City officers under the *Bush Fires Act 1954* and *Bush Fires regulations 1954*.
5. Develop strong, positive relationships with the local fire brigades that will aid in information and evidence sharing to conduct appropriate enforcement actions.

	TREATED RISK		
	Consequence	Likelihood	Rating
Financial	Critical	Possible	High
Health & Safety	Critical	Possible	High
Reputation	Moderate	Likely	Medium
Operation	Significant	Possible	High
Environment	Critical	Possible	High
Compliance	Moderate	Unlikely	Low

4. FIRE HAZARD ASSESSMENTS

This section is reflective of the fire hazard assessment period that commenced on 1 November 2021 and concluded on 31 March 2022.

4.1 Outcomes

1. The City developed the Fire Hazard Assessment Plan 2021/2022 that outlined strategies and processes for conducting fire hazard assessments against the Fire Hazard Reduction Notice.
2. The assessment application named Zoodata was upgraded, improving on data capturing and evidence gathering. The application proved to be more stable in comparison to the previous season, which in turn allowed a significant increase of follow up assessments to be conducted.
3. Not all properties could be assessed due to resource limitations, so a strategy using the Bushfire Risk Management System (BRMS) is seen in figure 8. Properties risk rated extreme and very high were assessed in the first instance.
4. The impact of COVID on fire hazard assessments did not prohibit officers from conducting property visits. Officers maintained physical distancing, mask wearing as required, and did not directly (face to face) engage with residents that presented flu symptoms or that were self-isolating.

5. Postal delays due to COVID-19 were experienced delaying some residents ability to plan and action their work orders. To ensure a fair and equitable approach the City allowed an additional 14 days to accommodate this issue.

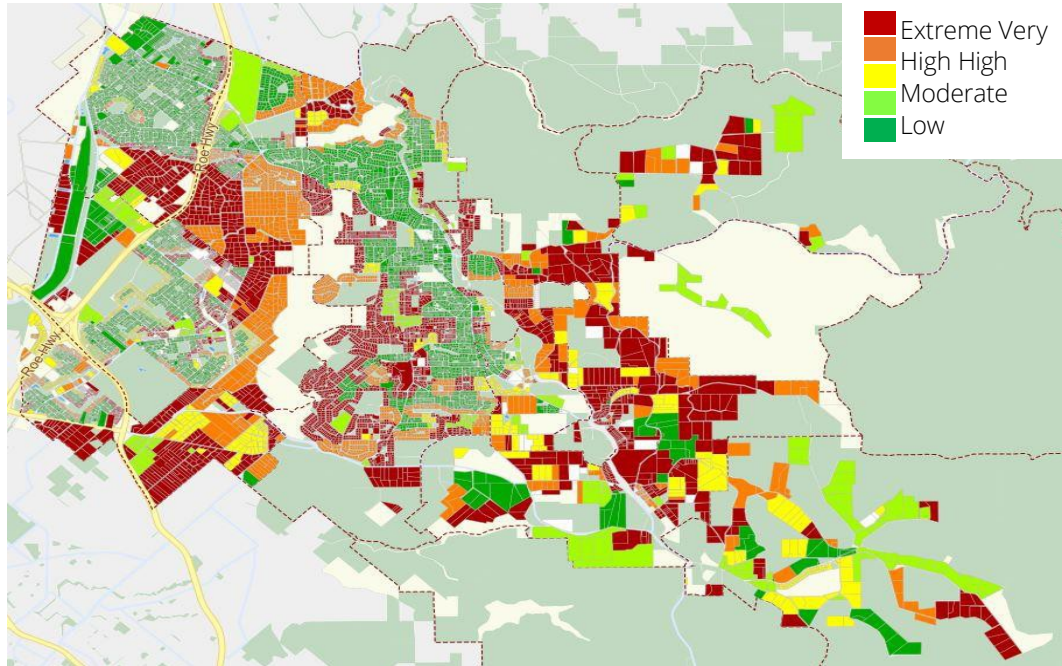


Figure 8: Bushfire Risk Management System (BRMS) risk rated properties.

4.2 Fire Hazard Reduction Notice (the Notice)

Collaboration with the Chief Bushfire Control Officer (CBFCO) and the Bushfire Advisory Committee (BFAC) resulted in an update to the design of the Notice.

The design review is to improve on capturing the reader’s attention and its level of importance by proving clarity in the actions required.

Significant updates to the Notice for this season:

1. First and Final Notice is included to both attract attention to the Notice and outline its importance.
2. Fire-break dimensions are bolded to emphasise the requirements. Common confusion or complaints during 20/21 season were particular to the height clearance. Many breaks had good width but did not action pruning or trimming for height.
3. Slashing description includes ‘dead’ in front of grass, shrubs, and plants. This request come through after the Notice was printed for 20/21. The description also includes the requirement to remove the cuttings once slashed. ‘Maintain’ is not required as grasses generally cure and die off around this period.

City of Kalamunda

FIRST AND FINAL NOTICE COMPLIANCE DUE BY: 1 NOV 2021

FIRE HAZARD REDUCTION NOTICE 2021/2022 ASSESSMENTS COMMENCE FROM: 1 NOV 2021

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

Pursuant to section 33 of the Bush Fire Act 1984 (BFA), the City of Kalamunda (the City) gives you 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 within the City. Failure to comply with this notice is an offence and can result in a penalty of up to \$5000. The City advises that its officers, servants, workmen, contractors, vehicles, machinery, and appliances (as the officers deem fit) may carry out the requirements of this notice that are not complied with by the date specified above, and 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 (to dead ends) **reticulable** fire break as close as possible inside the entire perimeter of the land. Maintained, reticulable long lawns that are kept completely green is acceptable in conjunction with, or in lieu of, a mineral earth fire break (see definition (H) (BFA)).

DEAD FLAMMABLE MATERIAL (DFM)
Reduce and/or maintain all dead flammable material below 8 tonnes per hectare (see definition (K), (L), (M)).

SLASHING
Slash, mow, or trim dead grasses, dead shrubs, and dead plants to a height no greater than 10mm and remove cuttings/brush across the entire property.

CLEAN GUTTER DEBRIS
Gutters, roofs, and walls of all buildings to be free of flammable matter and maintained.

DEAD FLAMMABLE MATERIAL
Reduce and/or maintain all dead flammable material below 8 tonnes per hectare (see definition (K), (L), (M)).

SLASHING
Slash, mow, or trim dead grasses, dead shrubs, and dead plants to a height no greater than 10mm and remove cuttings/brush across the entire property.

CLEAN GUTTER DEBRIS
Gutters, roofs, and walls of all buildings to be free of flammable matter and maintained.

VARIATION TO THE FIRE HAZARD REDUCTION NOTICE
If you consider it impractical to meet the requirements of this notice, you may apply to the City for a variation no later than 1 October 2021.

NOTE: A variation is not an exemption but an application to employ other methods of property improvement to land that you own and/or occupy. An administration fee of \$150 applies for applications received after 1 October 2021. If your application is not granted you must comply with all requirements outlined in the Fire Hazard Reduction Notice 2021/2022. Variation request application forms are available before 1 October 2021 on the City website at: www.kalamunda.wa.gov.au/city-of-kalamunda

City of Kalamunda

FIRE HAZARD REDUCTION NOTICE 2020/2021 COMPLIANCE DUE BEFORE: 1 NOV 2020

NOTICE TO ALL OWNERS AND OCCUPERS OF LAND WITHIN THE CITY OF KALAMUNDA ASSESSMENTS COMMENCE FROM: 1 NOV 2020

Pursuant to Section 33 of the Bush Fire Act 1984 (BFA), 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 to comply with the requirements 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 carry out the requirements 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 (to dead ends) **reticulable** fire break as close as possible inside the entire perimeter of the land. A reticulable and maintained green lawn may be accepted in lieu of a fire break.

DEAD FLAMMABLE MATERIAL
Maintain all dead flammable material below 8 tonnes per hectare (see definition (K) (BFA)).

SLASHING
Dead grass, shrubs and plants shall be slashed, mowed, or trimmed down to a height no greater than 10mm across the entire property.

ASSET PROTECTION ZONE (APZ)
Maintain a fuel reduced zone around all buildings on assets of value which extends 20 metres from the outermost point of the building or asset.

- Gutter, roof, and walls of buildings to be free of flammable matter and maintained.
- Fuel load within the 20-metre zone is reduced and maintained to no more than 3 tonnes per hectare.
- Trees over 6 metres in height within the 20-metre zone to be either pruned up to 2 metres.
- Trees or shrubs within 2 metres of the asset shall be pruned to a height no greater than 2 metres and/or pruned away from the asset to a distance no greater than 2 metres.

DEAD FLAMMABLE MATERIAL
Maintain all dead flammable material below 8 tonnes per hectare (see definition (K) (BFA)).

SLASHING
Dead grass, shrubs and plants shall be slashed, mowed, or trimmed down to a height no greater than 10mm across the entire property.

ASSET PROTECTION ZONE (APZ)
Maintain a fuel reduced zone around all buildings on assets of value which extends 20 metres from the outermost point of the building or asset.

- Gutter, roof, and walls of buildings to be free of flammable matter.
- Fuel load within the 20 metres shall be reduced and maintained to no more than 3 tonnes per hectare.
- Trees over 6 metres in height must be either pruned up to 2 metres.
- Trees or shrubs within 2 metres of the asset shall be pruned so that they have an overall height of no greater than 2 metres.

VARIATION TO THE FIRE HAZARD REDUCTION NOTICE
If you consider it impractical to meet the requirements of this notice, you may apply to the City of Kalamunda by no later than 1 October 2020, to request a variation to employ other methods of the protection 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/city-of-kalamunda

Figure 9: Design update in comparison with 2021/2022 to the last season's Notice.

4.3 Variations

1. 152 variation applications were received and approved (11.7% increase).

2. 142 applications were received prior to 1 October (36.5% increase). This positively displays an increase in awareness of the requirement under the Notice and may also indicate that the Notice is being retained and read.
3. 10 applications were received after 1 October and incurred the administration fee. (31.2% decrease). Majority of the late applications were due to either having never been assessed in the past or not being aware of what a variation means or the need to apply.
4. The introduction of a late fee of \$150 has dramatically improved variations being applied for prior to the cut-off date of 1 October of each year.

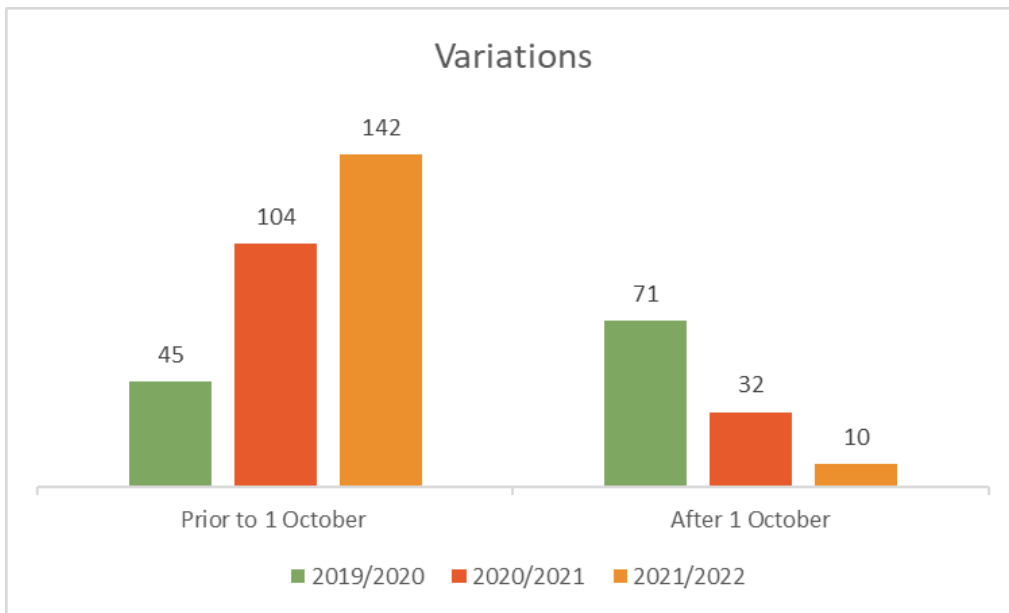


Figure 10: Variation applications received prior to and after 1 October.



Figure 11: Variation applications approved across the Eastern Rural District, Escarpment, and the Foothills.

4.4 Training & Staff

POSITION	ROLE/RESPONSIBILITY
Manager Environmental Health & Community Safety	<ul style="list-style-type: none"> • Enforcement reviews and support • COVID-19 Hardship approvals • Complaints management
CESM/Chief Bushfire Control Officer	<ul style="list-style-type: none"> • Training support • Variations review and approvals • Property assessment support
Coordinator Community Safety	<ul style="list-style-type: none"> • Enforcement reviews and support • COVID-19 Hardship approvals • Complaints management
Senior Fire & Emergency Management Officer	<ul style="list-style-type: none"> • Facilitation and delivery of training program • Coordination of assessments and support • Administration support • Property assessment & fire hazard complaints support • Work order extension request support
Senior Ranger	<ul style="list-style-type: none"> • Administration support (reserve) • Property assessment support
Fire & Emergency Management Officer	<ul style="list-style-type: none"> • In field support • Property assessments & Fire hazard complaints • Administration support • Enforcement reviews • Work order extension requests
Customer Relations Officer (CRO)	<ul style="list-style-type: none"> • Administration lead and support • Fire hazard complaints
Fire Control Officers (Casual x3)	<ul style="list-style-type: none"> • Property assessments • Fire hazard complaints • Work order extension requests • Enforcement review
Rangers	<ul style="list-style-type: none"> • Property assessments • Work order extension requests • Enforcement review • Zoning Certificate assessments (fire hazards)

Table 3: Fire compliance team that assisted in operational and administrative tasks across bushfire engagement events, issuing permits to burn, illegal burns on private property and fire hazard assessments.

4.5 Fire Hazard Assessments

1. Fire Hazard Assessments commenced on 1 November 2021 and concluded on 31 March 2022.
2. Assessments followed a staged approach of routines and follow up inspections.
3. 3077 properties were visited and assessed for fire hazards under the Notice.
4. A significant improvement in follow up assessments was completed (34% increase).
5. This data indicates more properties were assessed in the 2020/2021 season, however the focus for the 2021/2022 season was to achieve a higher level of follow up inspections which was achieved as indicated in (figure 15).
6. Compliant outcomes at the time of assessment were a 5% improvement.
7. 893 work orders were issued across the assessment period.
8. Infringements against section 33 this season were also sent a work order. This was to ensure that required works were still actioned and officers continued to follow up on fire hazards to ensure compliance.
9. 300 work orders were outstanding (not followed up) as of February 2022 this was partly due to the casual fire officers concluding their contract in late January. With the extension of 1 Casual FCO to 31 March 2022, this gap was closed to 106 not being completed which means 194 of those properties received a follow up inspection.
10. 110 (12.5%) of properties were marked inaccessible largely due to locked gates, however by the end of the assessment season. 2 of these properties remained inaccessible.

2021/2022	Assessment completed	Compliant Outcome		Work Orders Issued		Infringement Issued	
Eastern Rural District	816	524	64%	235	29%	23	3%
Escarpment	1534	1252	82%	230	15%	26	2%
Foothills	1427	1000	70%	347	24%	32	2%
TOTAL	3777	2776	73%	812	21.5%	81	2%

Table 4: Fire hazard assessment outcomes from 1 November 2021 to March 2022

1. Majority of properties both over the 4000m² and under were non-compliant against long standing dead grasses followed by fire breaks. This may have been a combination of the rainfall over the Winter months and in November and fire bans declared in December.
2. Relative to the number of properties assessed the foothills presented the highest outcomes of non-compliance across both under and over 4000m² property sizes.

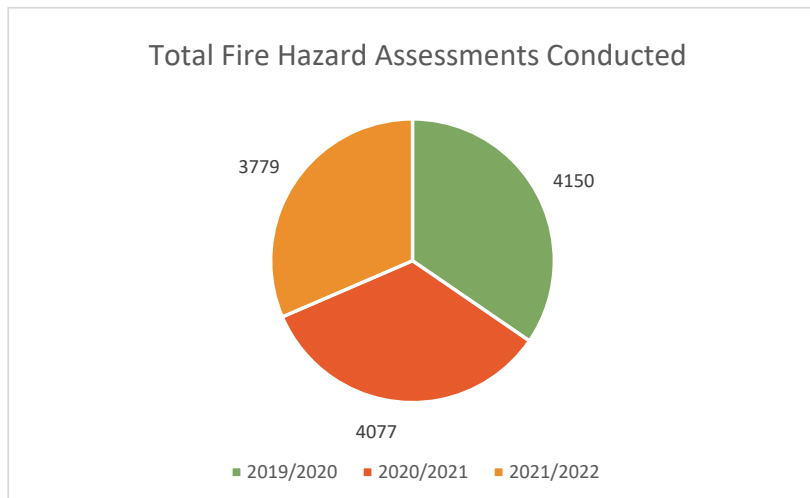


Figure 12: Total fire hazard assessments conducted.

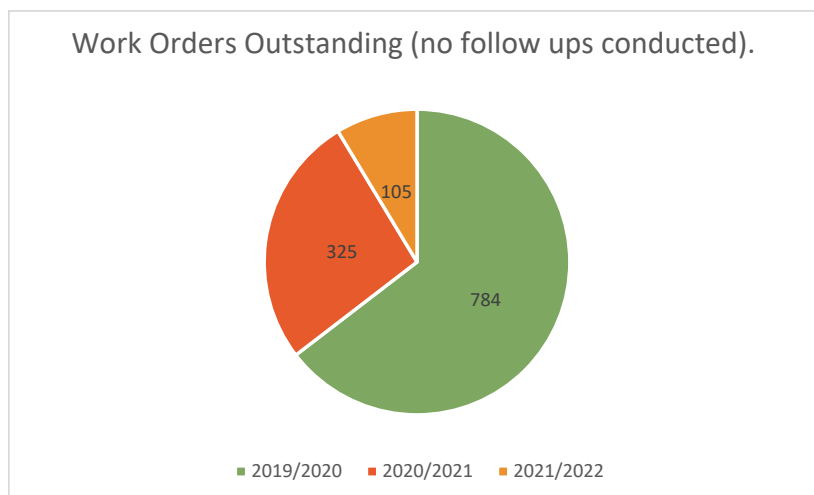


Figure 13: Work orders outstanding (not followed through compliance achieved).

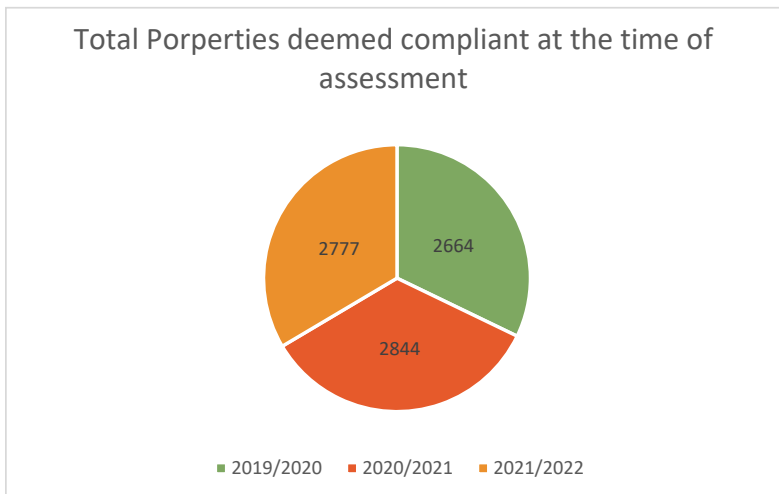


Figure 14: Total properties deemed compliant at the time of assessment.

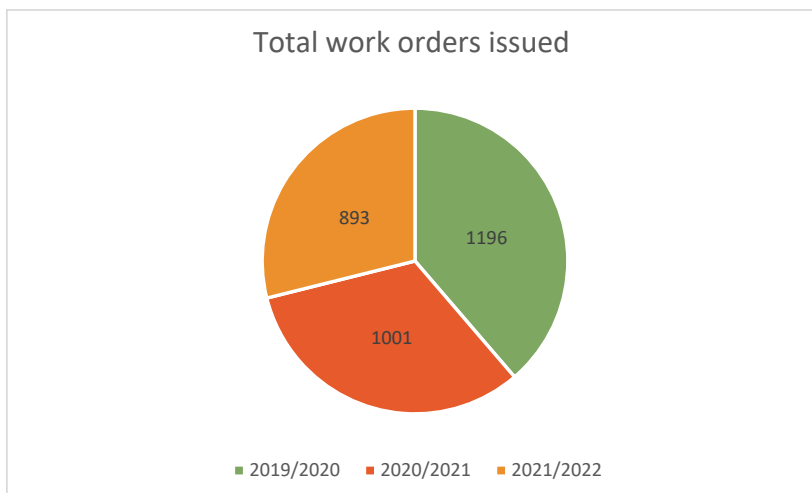


Figure 15: Total work orders issued.

The following tables display fire hazard assessment outcomes across all areas assessed with a compliance outcome sitting well over 50% in most locations.

	Assessments completed	Compliant outcome	Work orders issued	Infringement issued
Eastern Rural District				
Pickering Brook	97	56 57.73%	34 35.05%	5 5.15%
Paulls Valley	29	23 79.31%	2 6.90%	1 3.45%
Hacketts Gully	13	11 84.62%	0 0.00%	0 0.00%
Bickley	357	237 66.39%	107 29.97%	7 1.96%
Carmel	301	188 62.46%	86 28.57%	9 2.99%
Piesse Brook	12	6 50.00%	5 41.67%	1 8.33%
Canning Mills	7	3 42.86%	1 14.29%	0 0.00%
Escarpment				
Gooseberry Hill	399	312 78.20%	71 17.79%	6 1.50%
Kalamunda	826	688 83.29%	109 13.20%	16 1.94%
Walliston	16	12 75.00%	3 18.75%	1 6.25%
Lesmurdie	293	240 81.91%	47 16.04%	3 1.02%
Foothills				
Maida Vale	448	299 66.74%	135 30.13%	9 2.01%
High Wycombe	348	267 76.72%	57 16.38%	5 1.44%
Forrestfield	462	336 72.73%	103 22.29%	9 1.95%
Wattle Grove	169	97 57.40%	52 30.77%	9 5.33%

Table 5: Total work orders issued for Notice requirements by suburb.



Figure 16: Fire hazard assessments conducted across the Eastern Rural District, Escarpment, and the Foothills.

Escarpment

	GOOSEBERRY			
	HILL	KALAMUNDA	LESMURDIE	WALLISTON
Properties 4000m² or more				
Additional works	3	4	0	1
Fire Breaks	12	9	5	2
Fuel Load (Over 8t/ha)	6	8	4	0
Grass	21	10	7	0
Gutters	5	7	2	1
APZ	4	12	2	3

Properties under 4000m²				
Additional works	15	33	24	1
Fuel Load (Over 8t/ha)	22	20	12	0
Grass	19	65	25	2
Gutters	31	54	18	0

Foothills

	FORRESTFIELD	HIGH WYCOMBE	MAIDA VALE	WATTLE GROVE
Properties 4000m² or more				
Additional works	40	1	56	15
Fire Breaks	54	12	82	41
Fuel Load (Over 8t/ha)	9	4	5	14
Grass	44	7	58	42
Gutters	35	3	18	19
Asset Protection Zone	11	9	20	11

Properties under 4000m²				
Additional works	2	33	19	1
Fuel Load (Over 8t/ha)	3	10	8	0
Grass	20	44	16	1
Gutters	11	8	5	6

Eastern Rural District	BICKLEY	CANNING MILLS	CARMEL	HACKETTS GULLY	PAULLS VALLEY	PICKERING BROOK	PIESSE BROOK
Properties 4000m² or more							
Additional works	46	0	54	0	0	16	8
Fire Breaks	17	1	25	0	3	8	8
Fuel Load (Over 8t/ha)	4	1	4	0	0	0	3
Grass	16	1	30	0	1	16	2
Gutters	15	0	24	0	3	18	3
Asset Protection Zone	0	1	5	0	1	4	7
Properties under 4000m²							
Additional works	59	0	19	0	0	2	0
Fuel Load (Over 8t/ha)	6	0	0	0	0	1	0
Grass	18	0	8	0	0	3	0
Gutters	33	0	26	0	0	3	0

Non- Compliance Items	2021/2022	
	Total Work Orders Issued	
Grass	476	26.6%
Gutters	348	19.5%
Fire Breaks	279	15.6%
Fuel Loads (Over 8 tonne p/ha)	144	8.0%
Asset Protection Zone	90	5.0%
Additional works	452	25.3%

Table 6: Total work orders issued for Notice requirements by property size across the Eastern Rural District, Escarpment and the Foothills.

4.6 Enforcement

1. 81 infringements were issued for non-compliance under the Notice (s.33) (3.6% decrease). This increase is due to the increase of follow up assessments that were successfully completed.
2. The City attempts at all stages to engage with the property owners and/or residents to complete works outlined on their work orders and the Notice.
3. This season the City engaged mitigation contractors on two properties risk rated extreme to upgrade and install the fire breaks, which they failed to action under work orders.

The City of Kalamunda was successful in prosecuting a resident for noncompliance with Section 33.3 of the *Bush Fire Act 1954*. The magistrate labelled the property owner as selfish for not taking action that is required. They were ordered to pay \$4000.00 plus \$1,417 in cost in favour of the City.

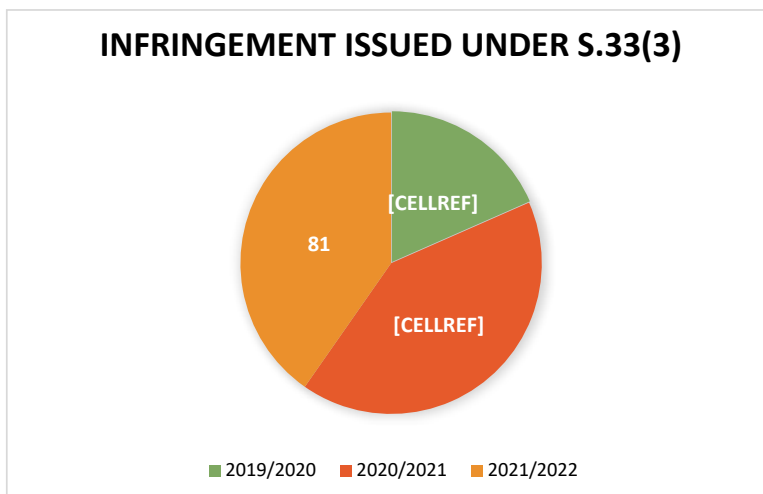


Figure 17: Infringements issued under s.33(3)

4.7 Recommendations and risk assessment

The City continually implements strategies and plans towards the threat of bushfire on its community. It is recommended that the Notice maintains its process or review and updates ensuring it remains current to surrounding environmental concerns.

The variations have improved considerably however still prompted an improvement for available information that explains variations and their purpose. The recommendation is to develop some printable guides available online or read on the website.

To continually improve and increase the effectiveness of current plans and strategies, further resourcing is required. Such requirements would include additional staff and the

extension of their contract timeframe, where a start date would involve 1 October and conclude on 31 March. This would allow effective training and compliance exposure whilst practical training in community engagement and communication. This recommendation is also backed by consistent feedback from previous casual fire officers at the conclusion of their time with the City.

HAZARD/RISK			
The City does not develop and issue a Fire Hazard Reduction Notice under section 33 of the <i>Bush Fires Act 1954</i> .			
	UNTREATED RISK		
	Consequence	Likelihood	Rating
Reputation	Major	Unlikely	Medium
Compliance	Major	Unlikely	Medium

TREATMENTS

1. Review and implement the Notice annually prior to the commencement of each bushfire season.
2. Collaborate with stakeholders for reviews and changes to legislation if relevant.
3. Include community feedback and observation in review of readability, design, and clarity.
4. Distribute the Notice with the Rates to ensure all landowners receive it (including E-Rates).
5. Incorporate the Notice into the Bushfire Community Engagement and Communication Plan.
6. Distribute the Notice to centre’s such as rec centres, libraries, and the City’s front counter
7. to enhance visibility and availability.
8. Provide the Notice in a digital compacity on the website and for download

	TREATED RISK		
	Consequence	Likelihood	Rating
Reputation	Moderate	Rare	Low
Compliance	Insignificant	Rare	Low

HAZARD/RISK			
The City does not enforce the Notice requirements by conducting fire hazard assessments.			
	UNTREATED RISK		
	Consequence	Likelihood	Rating
Reputation	Major	Possible	High
Environment	Significant	Possible	High
Compliance	Significant	Unlikely	Medium

TREATMENTS

1. Develop and implement a Fire Hazard Assessment Plan for each season reflective of the policies, processes, and procedures in place.
2. Review each season and adapt the plan where or if required.
3. Employ or hire additional resources to implement the plan in place.
4. Provide effective training to all fire compliance staff to ensure consistent information and outcomes are achieved.
5. Provide communication through media chains of the commencement of assessments and officers in the area. This improves community perception of the City and their role in community safety.

	TREATED RISK		
	Consequence	Likelihood	Rating
Reputation	Moderate	Unlikely	Low
Environment	Moderate	Unlikely	Low
Compliance	Insignificant	Rare	Low

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