



The Chairman
NSW Independent Bushfire Inquiry
GPO Box 5341
Sydney NSW 2001

Dear Sir,

Introduction.

This submission addresses the Inquiry's Terms of Reference numbers 1 and 2 stated on the Inquiry website and focusses the evident deficiencies in the risk management of Bushfire. I have limited my observation mainly to the Shoalhaven Council's implementation because I live in that district and was a victim of the fires of the 2000/2001. Examination of other Fire District's Bushfire Risk Management Plans indicate that Shoalhaven's implementation is typical however.

I have expressed my concern about Bushfire risk management to both RFS and Shoalhaven Council for about 10 years without discernible result. Before retiring I was professionally responsible for the management of risk in safety critical activities within the ADF.

I have made a substantially similar submission to the ongoing Commonwealth Inquiry into Disaster Management.

Discussion.

I conclude that bushfire risk management as that is implemented by the current Shoalhaven Bushfire Risk Management Plan (BFRMP) is substantially ineffective. Evidence appears to substantiate the following findings:

- The current BFRMP does not comply with applicable Legislation, RFS Regulation and Australian Risk Management standards.
- The current Fire Management Plan and Fire Trail and Access Plan have not been seen and are not known to be available to the public.
- The BFRMP does not usefully identify, assess or implement the treatment of bushfire risks.
- There is no evidence Bushfire Risk Management including the current BFRMP has been widely discussed and consulted with local community.
- The measures intended by both RFS and Shoalhaven City Council to mitigate bushfire risk are not able to be monitored and reviewed by the local community.
- There is no evidence that current BFRMP and the preceding BFRMP of 2010 are or were ever updated to reflect assessed changes of risk and treatment of bushfire risk.
- The tree preservation policy mandated by the Shoalhaven City Council appears to conflict with the bushfire mitigation measures promulgated by RFS in the BFRMP. This outcome causes confusion and contributes to ineffective risk management by Shoalhaven property owners.

Intended Method. I will briefly outline the Legislation and NSW RFS policy framework in which the BFRMP is prepared and implemented as I understand them to be. I shall then identify the deficiencies which I believe exist within the BFRMP. The latter paragraphs of

this submission will cover sources of information both potentially helpful and also those which may be confusing. Key Government authorities' promulgated attitudes to bushfire risk management will be identified. Finally, an overall assessment and recommendations will conclude the submission.

Framework of the Shoalhaven BFRMP. The following sources with their identified deficiencies are relevant;

- <https://www.legislation.nsw.gov.au/#/view/act/1997/65> The link is to the NSW Rural Fires Act 1997 #65 which I believe is the authority covering the drafting management of BFRMP and Bushfire Management Plans (BFMP) in NSW. Part 3 of the Act covers Bushfire Committees (at Division 3), Preparation of draft bushfire management Plans (at Part 3, Division 4), public participation in the preparation of plans (at Part 3, Division 5) and performance audit of BFRMP including the annual reporting of audits. (at Part 3, Division 6). Paragraph 54 of Part 3, Division 3 covers the content of draft BFRMP, draft plan of operations, content of draft fire access and fire access plan. Division 5 of Part 3 covers public participation in preparation of Plans including public availability of plans. Part 4 of the Act includes duty to prevent bushfires (at Division 1), bushfire hazard reduction including reporting of work completed (at Division 2).
- <https://www.rfs.nsw.gov.au/plan-and-prepare/know-your-risk/bush-fire-risk-management-plans> is the RFS webpage covering BFRMP from all NSW fire districts. Shoalhaven's BFRMP is included in alphabetical order.
- https://www.rfs.nsw.gov.au/data/assets/pdf_file/0018/9603/Policy-1-2008-Annex-B-Bush-Fire-Risk-Management-Plan-Guidelines.pdf is the detailed RFS guidance on the content, development and implementation of a NSW BFRMP. The current Shoalhaven BFRMP appears not to identify this RFS document as a reference or guide. The document specifies a superseded risk management standard i.e. AS/NZS 4360 which is now replaced by ISO 31000. Community education and participation is discussed at paragraph 10.5.3 and at Appendices 1 and 2 of the guide.
- https://www.rfs.nsw.gov.au/data/assets/pdf_file/0016/2527/Shoalhaven-BFRMP.pdf is the current Shoalhaven BFRMP authorised 7 March 2019 and linked to the Shoalhaven City Council's webpage covering bushfire risk. In the discussion below I will give in brackets, the paragraph reference of the BFRMP which covers the topic referred to as I highlight the individual points of my submission.
- https://www.rfs.nsw.gov.au/data/assets/pdf_file/0020/43463/Shoalhaven-BFRMP.pdf is the previous Shoalhaven BFRMP authorised 24 August 2010.

Deficiencies of the BFRMP. Shoalhaven District's current BFRMP does not, in format or content comply with the Legislation (Rural Fires Act 1997) or the standard applying to Risk Management which is ISO 31000 (paragraph 2.1). Neither does the BFRMP comply with the referenced and superseded AS/NZS 4360 or to the NSW RFS guide on BFRMP (Policy 1/2008 linked above). The current BFRMP is deficient in the following main areas of its content:

- The BFRMP's "Asset Register" (Appendix 2) cannot be reconciled with the preceding 2010 BFRMP which contrary to the NSW Rural Fires Act 1997, was 5 years out of date and without amendment since its promulgation. The reference numbering convention has evidently been changed. The location of assets exposed to hazard and risk is unclear. The

maps (Appendix 4) are illegible. And the required maps showing the history of bushfire occurrence are not included.

- The analyses of hazard and risk are incomplete. And the discussion of treatment of risks is incomplete (Appendix 3). So it is not possible to discern whether the risk assessed is before or after treatment.
 - There is no discussion and quantification of the magnitude of consequence or the frequency of Likelihood. Risk therefore remains essentially unquantified in the BFRMP. The assessments of Likelihood provided by the BFRMP do not accord with the map of bushfire prone area in the Shoalhaven promulgated at the Council's website.
 - The BFRMP accepts (unquantified and unexplained) "High" bushfire risk as apparently tolerable without need for treatment or review (paragraph 2.3.7).
 - The BFRMP provides for a "Monitor and Review" process (Chapter 4) so the implementation of the plan may be monitored along with the potential need for adjustment in changed hazard circumstances e.g. "drying out of the bush" due to drought. However there is no evidence that a review has ever been conducted either by RFS or Shoalhaven City Council before the most recent fires had started late 2019. (Several actions during and after the fires have been initiated by Council. These are covered below).
 - No public participation as directed by RFS policy appears to have taken place when the plan was promulgated. The BFRMP Appendix 1 covers earlier apparently ad hoc briefings, the latest of which is 3 March 2018 and before the BFRMP was promulgated.
 - On the frequently discussed subject of bushfire fuel the BFRMP appears to base its hazard assessment upon the interval of Hazard Reduction Burning (HRB) alone (paragraph 3.4) that can be safely sustained by specified categories of vegetation. Although a suggestion about overall fuel load is implied.
 - A number of references identified by the BFRMP have been superseded or could not be found including AS/NZS 4360 (paragraph 2.1), Forests NSW Regional Fuel Management Risk Plan (paragraph 3.2.13), NPWS Fire Management Strategy (paragraph 3.2.13) and BFCC Policy 3/2007(paragraph 4.4).
 - The dimensions of Bushfire Management Zones and fuel load limits specified by the BFRMP (paragraph 3.1) are not specific and do not appear to specify a defined and quantified level of risk or Bushfire Attack Level (BAL) when a particular treatment is implemented. It is not clear how this RFS direction re APZ and other management zones is consistent with Shoalhaven City Council's policies including for example draft Policy 19/10 titled "Creation of an Asset Protection Zone (APZ) over Council Owned or Managed Land". The Council's 10/50 vegetation removal rule appears also to override the requirement to establish appropriate Bushfire Management Zones including APZ without defining what level of fire damage might result from having significant vegetation (trees) only 10 metres from an asset.
- Involvement of NSW National Parks and Wildlife Service (NPWS).** The NSW Department of Planning Industry and Environment (DPIE) Manual of Fire Management Manual 2018-19 <https://www.environment.nsw.gov.au/research-and-publications/publications-search/fire-management-manual-2018-2019> which comprehensively promulgates NPWS bushfire policy and processes does not appear to have contributed to the Shoalhaven BFRMP. I have not found evidence that NPWS has been functionally involved with the development or implementation of the Shoalhaven BFRMP.

NSW Government “Living with Fire” Policy of 2013.

<https://www.nature.org.au/media/1712/bob-conroy-living-with-fire-in-nsw-national-parks1.pdf> The program covered by the policy paper was a 10 point strategy for managing bushfires in national parks and reserves. There is no evidence that this initiative has significantly contributed to the Shoalhaven BFRMP.

Authorisation of the BFRMP. The current Shoalhaven BFRMP has been authorised by the RFS. The deficiencies appear therefore to have been accepted. Shoalhaven City Council at a Council meeting late 2019 passed a motion which recorded Council’s intent to request the Commissioner of RFS to audit the Shoalhaven’s BRMP. The motion is understood to have arisen because of a perception that bushfire fuel had accumulated to a hazardous level. The status of that request is not known.

Risk Accepted by the BFRMP. I propose it is unlikely that the local community has an accurate appreciation of how well or otherwise bushfire risk is managed locally. I also doubt that the local community would be content with RFS’s acceptance of “High” bushfire risk on their behalf as advised by the BFRMP (paragraph 2.3.7).

Assessment of Recent Bushfire Damage. Until a proper assessment is conducted it would not be accurate or appropriate to attribute the recent fires to deficient BFRMP and unseen Fire Management and Trails and Access Plans. My own assessment is that the bushfire risk management was a contributory factor in the severity of the Shoalhaven fires and no criticism of the operational firefighters is intended. Before an accurate assessment of mitigation can be made the record of actual bushfire damage and losses should be compared against mitigation treatment completed or not before the fires. The details of RFS and Council mitigation work implemented may have been recorded elsewhere (other than in the BFRMP). Shoalhaven Council’s Environmental Services Natural Areas Fact Sheet: Bushfire Risk

<http://doc.shoalhaven.nsw.gov.au/DisplayDoc.aspx?record=D19/320174> at page 2 records that Council maintains over 130 Asset Protection Zones and Fire Breaks. The maps linked to the Shoalhaven document refer to the BFRMP but again no specifics of BAL or other quantitative measure is provided before or after treatment with the apparent vegetation clearance or other defensive works. However the record of the work may provide a basis for evaluating the mitigation provided. The record may also inform if and when the work was completed. It is relevant that much of the land within the Shoalhaven is not recorded within the Shoalhaven City Council’s (or RFS) risk mitigation program.

Sources of Potential Confusion. The following sources are relevant:

- <http://doc.shoalhaven.nsw.gov.au/DisplayDoc.aspx?record=d17/5670> is one of the Shoalhaven Council’s online guidance documents covering the removal of trees from private land. No explicit clarification of how tree preservation influences bushfire risk has been found.
- <https://www.rfs.nsw.gov.au/plan-and-prepare/1050-vegetation-clearing> is the RFS promulgation of the 10/50 policy covering the removal of shrubs and trees from private property. The policy is also promulgated by Shoalhaven Council. No clarification of how the 10/50 policy influences bushfire risk has been found.
- <https://www.shoalhaven.nsw.gov.au/Planning-amp-Building/Maps> - online is the link to the map of bushfire prone land in the Shoalhaven. The likelihood of bushfire promulgated by the map (i.e. likely) is in many case different to the likelihood of bushfire assessed in the

current BFRMP. That difference is not explained. The buffers shown on the map are not explained.

NSW RFS Report on bushfire Risk. The RFS Annual Report 2018-2019 is promulgated at the website: https://www.rfs.nsw.gov.au/_data/assets/pdf_file/0004/129892/NSW-RFS-Annual-Report-2018-19-web.pdf The site is the most recent annual report of the NSW RFS. Page 44 of the report covers KFA 2 “Coordinated Bush Firefighting and Prevention” advises that a review of the BFRMP process is underway. No reporting of BFRMP audits or detailed BFRMP directed bushfire risk mitigation in accordance with the NSW Rural Fires Act 1997 appear to have been provided. “Key Action A2.1 Meet Government hazard reduction and mitigation election commitments” is also covered on page 46 of the RFS report. This discusses a Government 4 year target of 750,000 hectares treated and 600,000 properties protected between 1 April 2015 and 31 March 2019. The relationship of this work to BFRMP’s is not provided. The level of risk reduction achieved by the work is also not specified.

Other Potentially Useful Sources of Information.

The risk management of bush fire is not consistent across States and Territories. The inconsistencies present avoidable hazard. My assessment is that WA has superior documentation providing for informing the public and developing and assuring a useful and compliant BFRMP. The following sources are also relevant:

- <https://www.dpaw.wa.gov.au/management/fire/fire-and-the-environment/51-fuel-loads-and-fire-intensity> This WA document provides a useful guide of fuel load fire intensity and the practicability of defence against bushfire at different intensities. It usefully explains that at some high fuel loads fire cannot be successfully fought with some personnel and equipment combinations. This advice indicates that the fuel accumulation in Shoalhaven’s bush burnt in recent fires was such that resulting fire could often not be successfully fought by local brigades without significant supplementation including by aircraft.
<https://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/BushfireInfoNotesPublications/DFES-InfoNote-ForestFuelLoadsInUrbanInterface.pdf> is another useful and informative WA (DFES) guide on risk and management of bushfire fuel loads.
- <https://www.dfes.wa.gov.au/waemergencyandriskmanagement/obrm/Documents/OBRM-Guidelines-for-Preparing-a-Bushfire-Risk-Management.pdf> is the current WA guidance on the development and assurance of BFRMP. The Legislation and Regulation policy basis of the document is different to that of NSW but it nevertheless demonstrates a substantially compliant format which achieves the objectives of the BFRMP. It is understood that the WA bushfire authority, unlike NSW RFS assures the quality of BFRMP by ongoing and routine “third-party” audit. The aims and objectives of the WA BFRMP policy indicate that management has established a compliant framework for bushfire risk management and the process receives ongoing review and improvement.
- Inquiries into recent NSW bushfires do not appear to assess the current BFRMP for that fire district for its influence upon outcomes (see as an example <https://www.emergency.nsw.gov.au/Documents/publications/Bega-Valley-Fire-Independent-Review.PDF>) A natural conclusion by the public may therefore be that BFRMP are of no significant consequence.
- This Victorian document “Bushfire Fuel Management Guide”
https://www.safertogether.vic.gov.au/_data/assets/pdf_file/0016/409120/Bushfire-Fuel-

[Management-Guide-Final-10th-May-2018.pdf](#) provides a useful example of planning options and community participation.

Department of Planning Industry and Environment (DPIE) Fire Management Strategies. I have represented the apparent deficiencies with Shoalhaven's BFRMP and Fire Management Plans to both RFS and Shoalhaven City Council over the most recent approximately 10 years without result. An example of a particularly hazardous Fire Management Plan covering the former Tianjara Firing Range within Morton National Park has been represented as deficient to both RFS and Shoalhaven Shire Council. No corrective action has (evidently) resulted. NSW Parks Fire Management Plans (or strategies) are promulgated by NSW DPIE. The website promulgating these is

<https://www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/fire/fire-management-strategies/search-fire-management-strategies> . One version of a NSW DPIE plan covering the former Tianjara Range area is at:

<https://www.environment.nsw.gov.au/research-and-publications/publications-search/morton-national-park-east-of-clyde-river-fire-management-strategy> .

The RFS plan detailing fire management within the former Tianjara Range is attached to the covering e mail of this submission (I could not include the two files in the text electronically: 1518389550 Tianjara MTA map 2015.pdf and 1518389550 Tianjara MTAOP.PDF refer).

The two plans are significantly different in terms of fire management, access, trails and safety precautions. But both plans are evidently current and authoritative. The inconsistency is anomalous, confusing and potentially hazardous to firefighters. Some of the fire management plans on the NSW Government website including the plan covering Morton National Park have not been reviewed for many years. The relationship of DPIE Fire Management Plans to those of RFS is not known.

Overall assessment of the Shoalhaven BFRMP and other information. My assessment is that the information on bushfire risk management in the Shoalhaven fire district is confusing and ineffective because the BFRMP does not usefully define what the risk is, the location of the risk, the assessed likelihood and consequence if the risk is left untreated. Perhaps more significantly the local community who should be considered the stakeholder or owner of the risk, has not participated in the risk assessing and managing process and the development of the BFRMP. Nor has the community been educated about risk management and BFRMP by RFS or Council. Most are probably unaware of the BFRMP's existence and the level of risk presented by bushfire to their assets. The available information is confusing because it is complex and in most instances without practicable explanation or utility in terms of managing risk. The RFS "Planning for Bushfire Protection (PBP)" of 2019 is an example of complexity. When conflicting tree preservation policies and the data of bushfire prone areas map are overlaid on this information along with the requirement of different planning zones and fire management zones, the task of determining what must be done to defend against bushfire becomes impracticable if not impossible for the average community member to understand what is permissible and necessary.

The BFRMP does not comply with the current standard covering risk management (ISO 31000). In its present form the document is ineffective. Although, if the plan had followed the referenced and superseded AS/NZS 4360 and RFS guidance document a useful document possibly would have resulted. However the BFRMP is evidently not reviewed nor amended. And neither are prescribed treatments apparently reviewed. A current example is the drying

effect of the ongoing severe drought which I propose should have brought forward a review and as a result, a strengthened mitigation measure including appropriate advice to the public. The information promulgated by AS/NZS Standard 3959: 2018 Construction of Buildings in Bushfire-prone Areas appears not to have contributed to the current BFRMP. Though much of the content of AS/NZS 3959 is in the RFS document PBP of 2019. The documents are apparently applied in Council building approval process but the data appears not to in every instance appear to influence the dimension of Bushfire Management Zones and council vegetation clearing policies including the 10/50 rule which is implemented by RFS and Council. The risk of flame and fuel load are not uniformly expressed in the quantitative terms of for example AS/NZS 3959 (and PBP: 2019) as Bushfire Attack Level (BAL). The lack of precision causes confusion about what is meant by different levels of risk e.g. Low to Extreme.

Training of Personnel Conducting Risk Management. This submission appears to be critical of several organisations. That is not intended. The aim is to identify and to provide substantiation of deficiencies so that these may be assessed to determine if corrective measures should be implemented so effective risk management is achieved. I assess that the deficiencies identified are most unlikely to result from deliberate action and oversight. I propose that deficiencies are likely to have resulted from a lack of training in formal risk management processes and also a lack of awareness by management of the need for diligence when implementing risk management. The website promulgating NSW RFS Governance is <https://www.rfs.nsw.gov.au/about-us/structure/governance> . This document is demonstrably inconsistent with RFS promulgated policy on bushfire risk management as that is implemented in the Shoalhaven and probably other fire districts

Shoalhaven Council Action since 2019 Bushfire. Of significance is the following (in italics) notice of motion is recorded in the minutes of the Shoalhaven Strategy and Assets Committee meeting of 21 January 2020 and is now promulgated as a petition on the Shoalhaven Council website. See

<https://doc.shoalhaven.nsw.gov.au/displaydoc.aspx?record=D20/76890>

SA20.1 Notice of Motion - Protection of our Towns from Bushfire

HPERM Ref: D20/7318

Submitted by: Cllr Greg Watson

Purpose / Summary

The following Notice of Motion, of which due notice has been given, is submitted for Council's consideration.

Recommendation (Item to be determined under delegated authority)

To assist in protect our Towns and Villages from future bushfire attack, Council resolve to mount a campaign to have the NSW or the Commonwealth Government carry out the following actions as they may apply to them and the same provisions also be applied to any Local Government Council where appropriate.

1. To exempt hazard reduction burns and the construction of asset protection zones, required as a result of a duly adopted standard, from the provisions of the EPCB Act and the

NSW Environmental Legislation, internal Government Agency Policies, or any other limitations within other ACTS or Regulations which restrict any authorised authority from constructing and maintaining APZs or undertaking hazard reduction burns.

2. To have the NSW State Government adopt as a general policy that Urban settlements requiring the provision of an APZ at the interface with natural areas, such APZ be at least 200m and to have such APZs managed as Park Lands.

3. To either repeal or create an easement over any section of a National Park where part of the Park falls within a 200m APZ and vest the management of that land in the local Council.

4. To enact Legislation to require a private land holder (including Aboriginal Land) create and maintain a parkland like cleared area of generally 200m to act as an APZ between the subject land and the interface with any urban development requiring the provision of an APZ, where a property owner fails to comply with this requirement an authorised authority may carry out the work and charge the land holder for the works, with the exception of Aboriginal Land where the clearing will remain a cost on the authority.

5. To require any Government Authority who manages forested areas to properly maintain and improve the construction of fire trails, this is to include the remove of any obstructions other than locked gates.

6. To consider the construction strategic fire breaks though forested areas including National Parks of a similar width to a major electricity easement.

The following report (extract only is reproduced here in italics) was submitted to the Shoalhaven Council Strategy and Assets Committee Meeting of 11 February 2020. A full record of meeting minutes including subject report is at:

https://shoalhaven.infocouncil.biz/Open/2020/02/SA_20200211_AGN_16055_AT_WEB.htm

SA20.19 NOM - Fire Hazard / Fuel Reduction - Council Managed & Other Lands - Action Plan - Legislation amendment - Orders - Bushfire Risk Management Plan Audit

HPERM Ref: D19/427858 Section:

Environmental Services

Approver: Phil Costello, Director Planning Environment & Development Group

Attachments: 1. Attachment 1: Treatment Strategies - Shoalhaven Bush Fire Risk Management Plan 2018 ↴

Reason for Report

Provide Council with information, as per the Notice of Motion (MIN19.863), regarding how bushfire risk is managed on Council owned and managed land and seek clarification in regard to safe fuel load levels. Also, information in regard to representation made to the NSW State Government relating to issuing hazard reduction orders, under section 66 of the RFS Act, and requesting an audit of the Shoalhaven Bushfire Risk Management Plan.

Recommendation (Item to be determined under delegated authority)

That Council

1. Endorse the continued application of treatments identified in the Shoalhaven District Bushfire Management Plan through the Annual Bushfire Mitigation Program and the continuation of the audit/review of Asset Protection Zones (APZs) as outlined in this report.

2. Council provide clarification/direction and possible allocation of resources for the development, assessment and implementation of an additional program of fuel reduction works that would meet the intent of the subject NoM.

Options

1. Council reiterates its support of its Annual Bushfire Mitigation Program and audit review process.
2. Implications: Council continues to meet its legislative responsibilities and obligations by implementing current best practice as outlined in the program.

2. In addition to the above, Council provide clarification/direction in regard to alternative Bushfire Mitigation measures or fuel load levels sought to meet the intent of the NoM and consider resourcing for such measures.

Implications: There would be an increase in resources required to implement additional measures that are not part of the existing strategic bushfire mitigation program. Failure to adequately resource such a program could result in significant dilution of effort and outcome.

Background

On 26 November 2019 Council resolved, via a Notice of Motion (MIN19.863), to:

1. Put in place an action plan to reduce the fuel load in all bush lands located on Council managed lands in the Shoalhaven City area to keep fuel loads at a safe level.
 - a. The fuel load reduction be undertaken by mechanical, chemical and controlled burning, whichever is determined to be the most appropriate.
 - b. The action plan be prepared in consultation with the NSW Rural Fire Service (RFS), and other agencies when Council manages land under their control.
 - c. When controlled burning is undertaken it should as far as practical be timed to coincide with the late Autumn early Winter period to minimise the impact on native fauna.
2. Council make representation to the NSW State Government to have the relevant Legislation amended to empower Councils to issue an order on the RFS to serve an order under their powers to have a property owner/manager to reduce a fire hazard where the fuel load is estimated to exceed a safe level. The authority of the RFS to impose a hazard reduction order be expanded to include land under the control or management of other NSW Government Agencies.
3. As part of the above process Council request the NSW Rural Fire Service Commissioner Shane Fitzsimmons to audit the Shoalhaven Bushfire Risk Management Plan.

Letters have been sent to the Hon. David Elliott MP, the Minister for Police & Emergency Services and the Commissioner of the NSW Rural Fire Service, Shane Fitzsimmons, as directed in items 2 and 3 above.

As is acknowledged by Shoalhaven Council the actions proposed by the motion and subsequent petition “Protecting our Towns from Bushfire” are not all presently provided for by Legislation eg the 200 metre and arbitrary APZ and uncoordinated Hazard Reduction Burning. However the Legislation and policy providing for the formal risk management of Bushfire in NSW presently do provide for planned and coordinated reduction of bushfire risk. The report to council about risk management and fuel load (at the link provided) appears to consider only land under Shoalhaven Council management which is stated to be “1% of the Shoalhaven land mass” and goes on to review the Shoalhaven BFRMP. The review does not appear to have involved NPWS or the Bushfire Management Committee. Much of the report appears to have been taken from the Shoalhaven BFRMP. The audit of sites which reportedly have been the subject of Council mitigation of fire risk is without objective evidence of which site was audited to what standard. The review and the earlier Notice of Motion “Protection of our Towns from Bushfire” above have not corrected the deficiencies I have identified in the Shoalhaven BFRMP and other sources of potential confusion. It is unclear what Shoalhaven Council aim is with raising a motion to conduct reduction of fire fuel load “in consultation with RFS and other agencies etc” when that action is presently required by existing Legislation and policy. It seems to indicate that the mandated bushfire risk management process is not well understood by Council.

Climate Change. I accept the contribution of Climate Change to the risk of bushfire. Many sources discuss the subject. And I will not usefully add to that here except to say that Climate Change is not specifically identified as a hazard and risk in BFRMP when this could be usefully factored in terms of increased rate of fuel accretion and higher intensity fires amongst other consequences. The inclusion of Climate Change in BFRMP would lead to appropriate mitigation measures to manage the apparent increasing level of risk. There is much discussion and even alarm about Climate Change in the public arena but the fact appears to be that there is little effort to identify and to manage the actual consequences.

Conclusion.

The formal risk management of Bushfire required by NSW Legislation and RFS policy is not occurring effectively. The absence of effective risk management makes probable more frequent and destructive bushfires in NSW. There is no convincing evidence that State Government authorities including NPA, NPWS or RFS are motivated toward implementing effective and compliant risk management. Although provided for in the NSW Rural Fires Act there is presently no audit function that would detect and correct these evident deficiencies.

Recommendations.

I have provided information which seeks to verify that existing Legislation, Regulation and instruction applied by State, Local Government authorities including RFS toward Bushfire risk management is both confusing and incapable of achieving the aim as I understand it. And the precise aim in terms of reducing the risk of bushfire is also unclear. The following actions are recommended;

- RFS in consultation with Government authorities particularly NPWS, define the objectives of the NSW BFRMP process across all subject land and territory.

- RFS amend to currency superseded risk management policy and guidance documentation.
- RFS and Shoalhaven Council include all applicable risk management information in the BFRMP including actual damage assessed to be potentially caused by fire in specified conditions of vegetation proximity, fuel load and access by trails.
- Shoalhaven's and other fire districts' BFRMP be formally and independently audited by an accredited WHS risk management auditor for compliance against ISO 31000 and RFS and Government objectives. Deficiencies found should be corrected. An ongoing compliance audit program covering BFRMP and other bushfire plans should also be implemented.
- NSW Government Department of Planning, Industry and Environment (DPIE) Fire Management Strategies be reviewed against RFS Fire Management Plans.
- To facilitate public participation and advice the of Shoalhaven Council's bushfire planning and implementation be established on the dedicated RFS and Council BFRMP website.
- Investigation of the most recent and ongoing fires in the Shoalhaven be implemented to determine if deficient risk management and planning in accordance with NSW Rural Fires Act 1997 contributed to the occurrence and severity of the fires.
- The apparent conflict between NSW/Shoalhaven tree preservation policy and bushfire risk management be reconciled.
- Public Participation in the BFRMP during development of the plan and it's monitoring and review after promulgation be implemented.
- Formal training of risk management processes be implemented within organisations responsible for and functionally associated with BFRMP.
- Stakeholders of the BFRMP be advised in the quantitative terms used by AS/NZS 3959 and RFS PBP: 2019 what the actual level of bushfire risk (BAL) is presented to their assets after fire risk mitigation measures, including fuel load management and tree clearance policies etc. have been implemented on their properties in accordance with BFRMP, Legislation, planning policies and other instruments.
- Government or other legally authoritative entity define what level of Bushfire risk a land owner is legally entitled to provide for her/his own protection and that of adjoining property.

Yours faithfully,

Cris George AM

22 May 2020

OPERATIONAL PROCEDURES FOR THE FORMER TIANJARA ARTILLERY RANGE & MILITARY TRAINING AREA
ADOPTED BY SHOALHAVEN BUSHFIRE MANAGEMENT COMMITTEE 18TH OCTOBER 2007 (modified Nov 2014)

WARNING The former Tianjara Artillery Range and Military Training Area contains unexploded ordnance (UXO). These may be lethal if disturbed by fire, personnel, vehicles, earthmoving plant or other fire management operations. The greatest risk of detonating a UXO is from digging (such as dozers), impact (such as rakehoe or tent pegs) or from long burning heat (such as burning tree stumps or windrows). The Department of Defence has recently classified the contamination of the area as substantial and slight. Fire management operational procedures for each area are detailed below.

SUBSTANTIAL AREA – (red boundary on operational map)

The Substantial Area shown covers the former artillery range (impact area) and has been extended to cover locations where UXO and impact craters have been found and to provide an operational safety buffer for fire management and suppression.

The 'fire perimeter' is the extent of any active fire or area burnt at the time. Burning logs, stumps etc. may still detonate UXO some time after the fire passes.

The following guidelines must be observed in the Substantial Area.

Substantial Area – fire vehicle access.

- Vehicles may ONLY be used on 'Identified Tracks' within the Substantial Area as marked on the operational map.
- No other tracks within the Substantial Area should be considered safe for access.

Further map and strategy information is available from the Shoalhaven Emergency Operations Centre (02 4424-4424).

Detection / Reconnaissance

- Where possible use vantage points outside the Substantial Area.
- If necessary use higher level aerial reconnaissance above 3000 ft AGL or greater than 1km from any fire perimeter.
- Where necessary, use Identified Track network until sighting or bearing is confirmed then retreat to the edge of the Substantial Area. Avoid approaching the fire perimeter closer than one kilometre. Do not drive or walk off formed tracks. Turn vehicles only on the formed tracks or at identified junctions or sites.
- Where fire is confirmed within the Substantial Area, retreat a minimum safe distance (1 km) or further to Substantial Area entry / track-head, record the estimated fire location (grid reference, or grid reference your location and bearing / distance to fire), fire size and local weather conditions. Report sighting to Fire Control and limit further access by others.

Fire suppression - Planning

- Do not expect to safely conduct active fire suppression within the Substantial Area. Prepare strategies considering that the fire may remain unchecked under forecast conditions within the Substantial Area.
- The Budawangis is a popular bushwalking destination. Certain tracks within the Substantial Area are open to public pedestrian and vehicle access. Initial response to any fire in the Substantial Area is the clearance of people from these tracks and prevention of further access. Clear visitors from areas closest to reported fire and move outwards to the edge of Substantial Area.
- Cooperative fire management and suppression operations involving the Substantial Area should always have a Safety Officer. The Safety Officer is preferably a local officer familiar with the Substantial Area and specific operational constraints. If a local officer is not available, a full briefing to the Safety Officer, Operations Officer and IC on specific Substantial Area issues is required.
- Unless widespread rain occurs across the Area, prevent access within 1km of the fire perimeter within the Substantial Area for at least three days after any fire.

Where necessary, consider programmed clearing of UXO from turning sites, refuge and specific areas along Identified Tracks to support operational procedures below.

Fire suppression - Operational guidelines

- **Mandatory briefing** of crews entering the Substantial Area stressing activity restrictions, and the response required if UXO is discovered.
- **Do not** drive or walk off Identified Tracks. Turn vehicles only on these formed tracks or at identified junctions or sites. Unless in an emergency, avoid turning on road verges or drainage features. Use of RAFT teams is prohibited.
- **Do not** use any **mechanical plant** (bulldozers, tritters etc) off the Identified Tracks within the Substantial Area. This includes road verges and drainage features.
- **Do not** use **aerial water bombing** within 1 km of active fire fronts or recently burnt areas.
- Avoid the use of **foam** and **retardant** unless prior environmental assessment and clearance is given.
- **Aerial surveillance** is to be above 3000 ft AGL or at least 1km from fire perimeter.
- **Aerial incendiary work** is limited to areas no less than 1km from active fire or recently burnt ground.
- **Backburning** off Identified Tracks within the Substantial Area is only recommended for strategic fuel management ahead of wildfire. Personnel can not remain to patrol the burn edge due to risk of exploding ordnance.
 - Backburning should not be attempted less than 1km from any fire perimeter within the Substantial Area.
 - Do not use direct fire or drip-torches. Ignition is to be undertaken using incendiary capsules deployed from a vehicle moving along Identified Tracks outwards away from the active fire to margins of the Substantial Area. Incendiary launchers may be used by qualified personnel.
 - Deploy primed capsules at desired intervals and proceed without delay. Do not pause to confirm ignition.
 - Capsule deployment should be undertaken from one vehicle (with minimum crew) led by another vehicle providing navigation support and back-up, remaining in sight of the incendiary deployment vehicle at all times.

- Plan frequency and spacing of capsule placement and vehicle speed to optimise the distance of the backburning vehicle from the developing fire.
- Specific incendiary deployment, safety, communication / SAR-watch and crew briefing plans are to be developed for each operation.
- Plan carefully! Backburn ignition can not be patrolled and relies on the fuel break afforded by unpatrolled tracks. This is aided by capsule spacing to achieve planned fire spread and intensity under appropriate weather conditions or forecast changes.

- **Low level aircraft operations** (less than 3000 ft AGL) over the Substantial Area during fire activities requires prior approval from the IC. These operations are limited to preventive initial attack, authorised application of retardants, initial deployment of incendiary capsules and rescue. See following constraints.
- **Low level aerial water bombing** is strictly limited to initial preventive strikes on small ignitions/spot fires where fire intensity is very low and more than 1km from any active fire front or burnt ground. Do not add foam unless authorised.
- **Low level aerial retardant application** is limited to areas more than 1km from any active fire front or burnt ground and should only be used where there is significant strategic advantage and prior environmental approval is obtained.
- **Low level aerial incendiary deployment** is limited to an initial run in areas more than 1km from any active fire front or burnt ground. Once incendiaries are deployed, aircraft should not operate within 1km of developing fire. This option is only recommended for strategic fuel management ahead of wildfire or prescribed burning as supporting ground containment relies on un-patrolled tracks, other fuel breaks/terrain within the Substantial Area and appropriate weather conditions or changes. Careful flight planning and optimum conditions are required.
- Use low flying helicopter operations for rescue only near or within a fire perimeter in the Substantial Area.

Rescue

Emergency aid is possible off Identified Tracks within the Substantial Area using the following guidelines:

- Obtain permission and briefing from Fire Control.
- Use the minimum safe number of personnel required for the operation and ensure that each individual is fully briefed.
- If aid is required within a fire ground, preferably use a helicopter. There is less risk in using a helicopter than moving off-road by foot. Identify a route to the casualty site that is the most distant from any active fire. Limit the number of flights required and where possible, use rock or identified road areas for landing zones.
- Search operations should be conducted above 3000 ft AGL or where possible more than 1km from any active fire.

Vegetation / Fuel Management – non-emergency

Planning / Operations

- Carefully plan prescribed burning to use forecast conditions and available natural features to limit extent of fire as direct control can not be used within the Substantial Area.
- Introduce fire remotely by aerial incendiaries or back-burning using the same operational constraints as for wildfire suppression (above).

UXO report / discovery

- If a UXO is discovered, personnel should avoid any further disturbance, confirm the location of UXO (grid ref/directions), withdraw to a safe distance (1km) and report sighting. Local Police and Shoalhaven Emergency Operations Centre have Defence Department contact details to initiate UXO response procedures.
- Immediate steps should be taken to restrict access by others to a safe distance from the site (1km).
- Clearance to permit access must come from Defence Department UXO personnel and Police.

Further information on UXO safety is found on the Defence Department website at <http://www.defence.gov.au/uxo/>

SLIGHT AREA – (purple boundary on operational map)

The Slight Area shown covers the remainder of the area.

Undertake fire management activities as normal, provided the following additional conditions are applied continuously through wildfire incidents and planned hazard reductions:

- All fire fighters, including aviation personnel, are to be adequately briefed concerning the remote possibility of UXO before working in the Slight Area and in particular warned about the heightened risk associated with operating near to long burning parts of a fire (such as hot spots, burning logs and stumps).
- During back burning and mop up operations, fire fighters should identify and mark any long burning hot spots and ensure as little time as is considered practical is spent near them and mopping them up.
- Soil disturbance must be avoided and machinery such as dozers are not to be employed off track and all construction of fire advantages off track is limited to use of a tritter or slashers to reduce the chance of disturbing buried UXO.
- Fire fighters are required to continuously use eye protection outside vehicles.
- All fire fighters are to remain vigilant to the presence of UXO at all times and report any instances of munitions discovery or the sound of explosions immediately to the Incident Controller.