April 15, 2011

Mr. Mick Keelty APM
Chair, Perth Hills Bushfire February 2011 Review
Locked Bag 10, Cloisters Square
Perth WA 6850

Dear Mick,

The Western Australian Farmers Federation (Inc.) (WAFarmers) thanks you for the opportunity to comment on the Perth Hills Bushfire February 2011 Review.

As background, WAFarmers is the State's largest and most influential rural lobby and service organisation. WAFarmers represents approximately 4,000 Western Australian farmers from a range of primary industries including grain growers, meat and wool producers, horticulturalists, dairy farmers, commercial egg producers, pastoralists and beekeepers.

Collectively our members are major contributors to the $5.5 billion gross value of production that agriculture in its various forms contributes annually to Western Australia's economy. Additionally, through differing forms of land tenure, our members own, control and capably manage many millions of hectares of the State's land mass and as such are responsible for maintaining the productive capacity and environmental well being of that land.

Whilst the Perth Hills Bushfire in February 2011 did not directly affect any WAFarmers members, it occurred only several years after fires devastated fruit orchards in another nearby part of the Perth Hills, and on-farm losses to fire in Western Australia amount to millions of dollars each year. As such, WAFarmers on behalf of our members, who are significant land holders and hold a range of positions through volunteer fire fighting organisations, makes this submission.

In making this submission, WAFarmers is mindful that fire response and management has been significantly reviewed in recent years, as a result of fire events both in Western Australia and across Australia. WAFarmers involvement in these has involved the following comments which we believe are equally appropriate to the current Inquiry:

- Preventative measures, particularly the annual area of prescribed burning needs to increase, and encompass greater management by FESA, which would allow targeted burning outside the current responsibilities of DEC.

- The management, coordination and personnel resources that the Department of Environment and Conservation (DEC) and FESA bring to fires are of a high standard.

- Communication across the range of agencies and volunteers at these events needs to be addressed. FESA's hardware is generally adequate to communicate with local resources (e.g. Fire Control Officers have VHF radios with DEC channels on them) however the effectiveness of its use is another matter. Communication between all parties at a fire event has to improve, all the hardware in the world counts for nothing, if the fire controllers lack experience of wild fires.

- The difference in management between the response to controlled burns and wild or uncontrolled fires has to be recognised in the planning and preparation of these events.

- There are only a small number of large wild fires in this State each year, recent changes to legislation have resulted in FESA having the ultimate supervisory role in these events.

- Incident co-ordination with WA Police has to improve – when police are performing operational activities, controlling traffic or public movement, their acceptance that this needs to be their primary function at that time needs reinforcing.

I thank you for consideration of this submission. WAFarmers request an opportunity to address the Inquiry, should you hold public hearings. To arrange that or to further discuss the issues raised in this submission, please do not hesitate to contact WAFarmers Director of Policy, Alan Hill on .

Yours sincerely

Mike Norton
President

Friday April 15, 2011

Mr Mick Keelty APM
Chair
Perth Hills Bushfire February 2011 Review
197 St George's Terrace
PERTH WA 6000

Dear Mr Keelty

Perth Hills Bushfire February 2011 Review

SGIO commends the West Australian Government for inviting public hearings and submissions as part of the review into aspects of bushfire risk management in the Perth Hills area.

About SGIO

SGIO is part of the Direct Insurance arm of Insurance Australia Group (IAG), and is one of the leading direct insurers in WA, with branches in the Perth CBD, Geraldton, Kalgoorlie, Bunbury, Busselton and Mandurah.

SGIO has been insuring West Australians for more than 85 years, taking pride in protecting the things they value and being there when they need us. As a leading insurer we have a long-standing commitment to helping create safer and stronger communities. This commitment is evidenced through some key community investment programs and partnerships including:

The Salvation Army Emergency Services Unit (SAES) – as a major sponsor of the SAES SGIO helps the SAES maintain and continue their emergency services program. We provide much needed equipment such as shade tents, wet weather clothing and training items. We also offer additional funding and support during major disasters and our employees also contribute their time throughout the year with the Salvos.

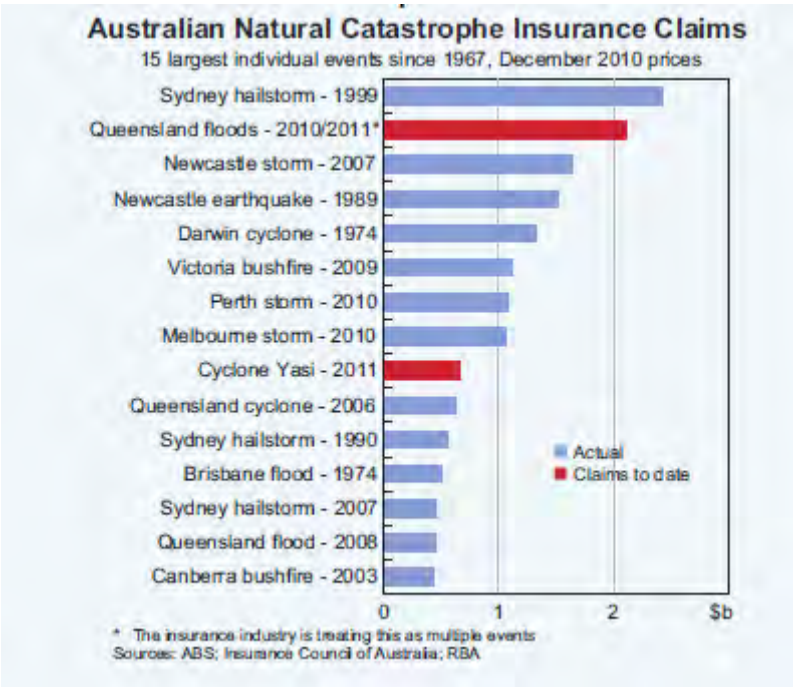
The SGIO Community Grants program - now in its ninth year, the program is designed to help local organisations across WA build safer, more sustainable communities. Last year SGIO contributed around $80,000 to 18 community groups across WA. The Community Grants program supports local community organisations working in the areas of crime prevention, road safety, emergency readiness and response and the environment.

Impact of Perth Hills bushfires on SGIO customers

Weather and climate are "core business" for the general insurance industry. At its most basic, insurers underwrite weather-related losses (including physical damages to insured property and interruptions to business continuity) by assessing, pricing and spreading the risk and then meeting valid claims when they arise.

The Reserve Bank of Australia (RBA) noted in the March 2010 *Financial Stability Review:*

> *"...there has been a pick-up in the frequency of large claim events in recent years. Nine of Australia's fifteen largest claim events since 1967, measured in constant price terms, have occurred since 2006. Consistent with this, total annual catastrophe claims, in constant prices, have averaged around $2 billion since 2006, compared with an average of $0.6 billion since 1970." (RBA, p.39)*



Source: RBA March 2010.

SGIO customers lodged more than 60 claims for damage to property, contents and motor vehicles due to the bushfires that impacted the Perth Hills in February 2011.

In response to the bushfires SGIO rapidly mobilised assessors in order to conduct assessments at properties in affected areas as soon as it was safe to do so. We also contacted affected customers directly to arrange temporary accommodation and emergency payments where required.

In addition, SGIO also established a mobile claims centre based at the Armadale Arena to assist customers with enquiries, emergency payments and the lodgement of claims for the period immediately following the fires.

SGIO community partner the Salvation Army Emergency Services Unit was also active in supporting communities, FESA and bushfire volunteer crews in affected areas in the aftermath of the fires.

Improved community resilience through insurance

SGIO recognises the **crucial role of Government** in providing a comprehensive and clearly defined regulatory framework that promotes community resilience to risk and facilitates more affordable premiums and more predictable claim costs. Government has a particular role in encouraging and regulating risk-appropriate development of the built environment and providing an appropriate emergency services framework.

SGIO believes that there is a need for greater emphasis by Government on community adaptation to extreme weather events. For example, stronger building codes to protect structures from extreme weather hazards; more risk-appropriate use of land; and greater emphasis on hazard mitigation infrastructure.

Moreover, for individuals and communities there is a need to **take personal responsibility to understand what risks they are insuring against** and the need for individuals to financially protect themselves against loss. As the COAG National Strategy for Disaster Resilience (February 2011), highlighted:

"Underpinning a disaster resilient community is knowledge and understanding of local disaster risks. We all share responsibility to understand these risks, and how they might affect us. By understanding the nature and extent of risks, we can seek to control their impacts and inform the way we prepare for and recover from them".

Many of our customers in Western Australia live in areas that are exposed to natural hazards. Due to the rapid development of the built environment, along with increasing population density weather events such as storms and fires can do more damage than ever before.

Broadly speaking, private insurance underpins a community's economic resilience to severe weather risks. It is the responsibility of insurers to provide accessible insurance products that price the risks realistically and equitably.

We protect our customers' assets so their exposure is reduced, while at the same time enhancing their ability to recover when events occur. In order to operate a sustainable insurance business that is there to pay claims, we need to ensure we strike the right balance between keeping premiums affordable and ensuring they reflect the risks our customers face.

SGIO strongly advocates that it is a joint responsibility of government, industry and the community to ensure communities are prepared for severe weather events such as bushfires with appropriate levels of insurance cover.

We believe that it is in the interest of Government to encourage communities to ensure they have appropriate levels of private insurance so that the costs of responding to bushfire and other catastrophes are not borne by the Government and public purse.

In the absence of private insurance, Governments are de facto in taking on the responsibility of insurer of "last resort" via emergency distribution of government financial assistance. Arguably, while there may be an equity argument for individuals who are financially disadvantaged to access government assistance, open-ended assistance can be inequitable when provided to those individuals who are able to, but choose not to responsibly insure.

Open-ended government assistance can also further reduce the incentive for private insurance and can promote dependence on government assistance and reduce incentives for self-reliance and personal responsibility.

Community Education

One strategy for building community resilience is through the development of community education programs to highlight the principle risks that communities may face from natural hazards such as bushfires and actions that communities can take to mitigate risks to themselves, their own private assets and their communities at large.

SGIO works proactively to educate the community on the benefits of appropriate levels of insurance cover in Western Australia. For example, we run regular media campaigns to

encourage the community to prepare their homes to help prevent the risk of property damage through weather events.

SGIO also employs a variety of campaigns and events to encourage customers to check their level of insurance cover and participate with our organisation in ways other than just at sales and claims time. We have also made tools available such as our Home Building and Home Contents Calculators and we taken active steps to ensure our customers understand and keep their policies updated.

SGIO believes therefore it is in the WA Government's interest to help foster communities that have a healthy local economy, high levels of social capital and appropriate levels of insurance cover as a key component of creating communities that a more resilient to natural hazards.

SGIO would be pleased to assist the WA Government on the development of community education campaigns that encourage communities to build their resilience to natural hazards, including taking individual accountability for their own assets through the adoption of appropriate levels of insurance cover for their homes, contents and motor vehicles.

Conclusion

SGIO strongly advocates that it is a joint responsibility of government, industry and the community to build community resilience to natural hazards such as bushfires and that encouraging communities to adopt appropriate levels of insurance cover is integral to building community resilience to severe weather events such as bushfires and storms.

We believe that it is in the interest of the WA Government to further encourage and educate communities to ensure they have appropriate levels of private insurance so that the costs of responding to bushfires and other catastrophes are not borne by the Government and public purse and also so that communities in Western Australia are better prepared to withstand and recover from natural events in the future.

SGIO would be pleased to meet with the Perth Hills Bushfire review for further discussion on any of the points raised in this submission. Please do not hesitate to contact me or
f SGIO can provide any further assistance with respect to the review.

Yours faithfully

Rob Cory
Corporate Affairs and Community Manager
SGIO

Submission to the Perth Hills Bushfire February 2011 Review

Submissions should be submitted electronically (preferred) to:

or posted to:

Perth Hills Bushfire February 2011 Review
Locked Bag 10, Cloisters Square
PERTH WA 6850

Note: All submissions received will be made available on the Inquiry's website. People wishing to make a confidential submission should make this clear at the time of lodgement and the Inquiry will not publish those submissions**.** However, people should be aware that whilst every endeavour will be made to ensure confidentiality, there is a possibility that such submissions might be released in accordance with the *Freedom of Information Act 1992.*

Contact Details

Name:	Mr Mike Bradford
Address:	
Email address:	
Telephone number:	

Organisation Details (Where Applicable)

Is this submission presented on behalf of an organisation:	Yes / X
If yes, name of organisation:	Landgate
Position in organisation:	Chief Executive

Response to Terms of Reference

You must address at least one of the Terms of Reference.

1. **The adequacy of current preventative measures, specifically prescribed burning and other bushfire mitigation activities.**
   Landgate has no comment on these issues.

2. **The impact of land use, environmental and building laws, practices and policies in the affected areas, affecting bushfire prevention, mitigation and response and what, if any, changes may be required.**

   Landgate has no comment on these issues.

3. **The actions that can and should be taken by landowners, residents and tenants in relation to bushfire risk management including undertaking vegetation clearance, operation of evaporative air-conditioners and storage and/or removal of hazardous inflammable material surrounding their dwellings and buildings. This should include consideration of associated enforcement regimes and penalties.**

   Landgate has no comment on these issues.

4. **The adequacy and effectiveness of information and communication campaigns and mechanisms, including systems for alerting residents in relation to the fire or potential fires.**

4.1 Introduction

Landgate is a statutory authority with commercial powers established under the *Land Information Authority Act 2006* (the Act). It is the trusted primary source of many fundamental location information datasets and the information systems and services it provides are vital to the efficient operation of the property market and underpin the rating and tax base in WA.

Landgate is founded on dual objectives: the management and provision of location information on a not for profit basis; and the development of commercial products and services from the location information asset which can be marketed to generate a fair return for the State.

These interdependent objectives set the framework for Landgate to:

- maintain the quality and integrity of the Government's location information systems (including the State's survey, mapping, titles and valuations functions);
- provide access to location information on a fair basis; and
- operate on a sustainable commercial basis, with a view to generating profits that can be reinvested back into providing high quality, cost effective systems and services and into initiatives that deliver economic, environmental and social benefits to society.

Location information is a valuable asset because a range of economic, social and physical data can be linked to a geographic location and integrated, transforming it into location knowledge. Providing people access to knowledge of any location is powerful as it helps them to make informed and confident decisions. Better decisions lead to better economic, environmental and community outcomes.

Location information is key information which relates to Bush fires. This is because it includes such information as aerial photography roads, address, topography and location of buildings for emergency services response and land ownership and Fire scar mapping for recovery operations. Time series aerial photography captured before and after fires and available as 3D models provides a visualisation of the fire and its impacts.

Landgate has developed a Location Information Strategy in collaboration with the WALIS community to enhance the collection and management of WA's location information. The Location Information Strategy will be progressed by Government and industry organisations through initiatives that increase collaboration, reduce duplication, improve access to data and service delivery and provide the evidence necessary for sound decision making. Landgate will take a lead role on relevant projects as part of implementing the strategy.

Full implementation of the following five strategic initiatives will ensure that WA realises the true value of its location information and builds a solid foundation for location information in the future. The initiatives are:

- Strategic capture of the State's location information.
- Enhancing access to location information.
- Citizen engagement through location technology.
- Education and career development – embedding location intelligence.
- Promoting and branding the State – Location WA.

Landgate is well positioned to be the source of quality data about WA and can leverage established relationships and delivery channels to become the location services source for Government. Over the next five years, Landgate will facilitate the evolution of technical infrastructure and its operability underpinning the location information strategy, including the redevelopment of the 'SLIP Enabler' component of SLIP and development of the iSpatial platform.

As the primary source of many fundamental datasets that underpin the location information industry in the State (i.e. tenure and cadastre) and with a reputation as a "can do" organisation and an emerging leader, Landgate will lead the transformation of the location based knowledge sector in order to maximise the resultant economic, environmental and social benefits for the community.

Landgate, as part of a partnership with other agencies such as FESA and DEC, has developed an Emergency Services Directory. The more recent examples of these are those which cover the South west and the Great Southern Coastal in WA. The next Directory will cover the Mid West Region in May 2012. These directories provide such information as water points, contour information and isolated buildings which are laid over the street directory information. This aids emergency response by government agencies.

Supporting Emergency Management is an Application that has been developed by FESA as part of the SLIP Program. That Application, known as EMERGEO draws upon the data contained within SLIP. The data includes land ownership and subdivision, roads information, dangerous goods, sensitive flora and fauna, fuel age, imagery and current fire shape and roadblock information. This application has been operating for approximately 4 years.

4.2 SLIP Enabler Application Usage on the weekend of 5th and 6th February 2011

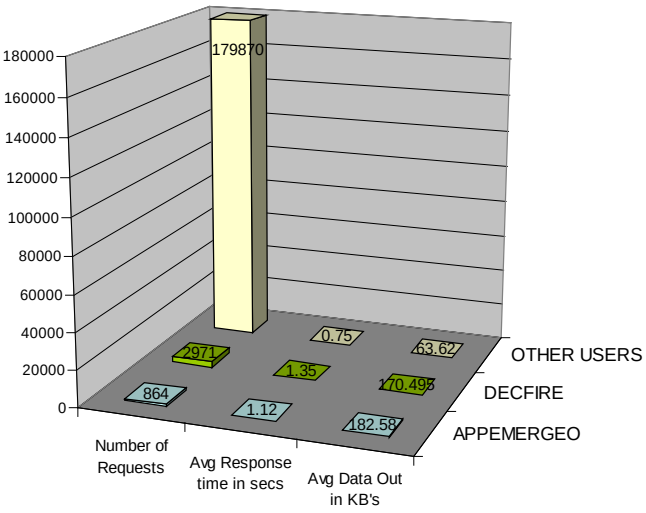
The Shared Land Information Platform (SLIP) is the platform connecting WA Government spatial information, allowing the most up-to-date and relevant information from many information custodians to be accessed, viewed and most importantly combined with other datasets into the context required by the user. Spatial information underpins and links a range of government activities, including planning, land use and development, environmental sustainability and emergency management. SLIP makes it easier to locate and use this information.

SLIP is a whole-of-government initiative, operating in a collaborative manner across a wide range of WA State Government agencies. SLIP delivers online real-time access to spatial information in a seamless cross-Government manner, thereby overcoming the agency 'run-around' often experienced by industry and the public. The SLIP platform is implemented using an enabling framework built on current Landgate infrastructure. The platform connects many State Government agencies, and currently provides access to over 450 datasets, together with services for security, management, metering, cataloguing and viewing of data.

This document outlines SLIP Enabler application usage on the days of the "Hills" fires on the days of 5th and 6th Feb 2011.

The graph below indicates the number of requests, response times and amount of data retrieved (on average) from 12am on the 5th Feb 2011 through to 6th Feb 2011. A request may typically take the form of a need to access data from a combination of datasets through the SLIP infrastructure. This means that simultaneous real-time access to the information from several agencies is often required. SLIP then delivers this in real time by accessing the relevant data sets maintained by the relevant agencies.

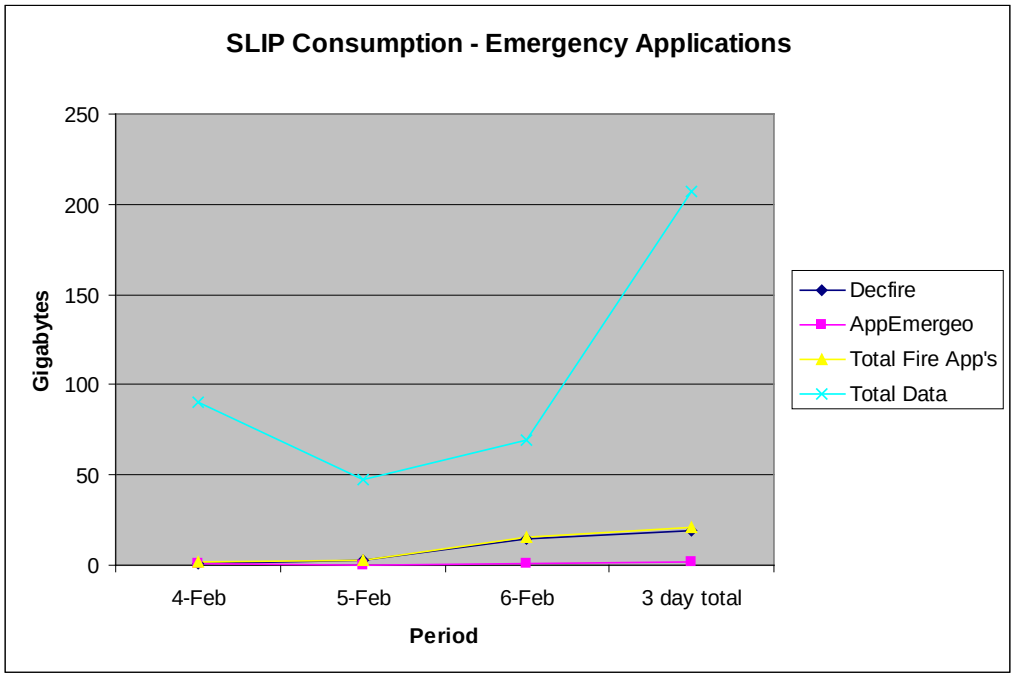
From this we can see average response times were less than 1.5 seconds over this period.



	Number of Requests	Avg Response time in secs	Avg Data Out in KB's
APPEMERGEO	864	1.12	182.58
DECFIRE	2971	1.35	170.495
OTHER USERS	179870	0.75	63.62

Availability of imagery through SLIP Enabler was also high on the dates in question. Landgate's Image Web Server (IWS) recorded an availability level of 99.63% for the weekend, with no outage exceeding 2 minutes in duration.

The above diagram is designed to show Emergency Management usage by FESA and DEC applications that support emergency incident planning and response. As shown by the 'other users' column, this use is a small proportion of data consumed through SLIP Enabler during this period. The total volume of data downloaded during this period was 206.739 Gigabytes; of which DEC and FESA application usage represents approximately 10.27% (21.234 Gigabytes). The diagram below shows this comparison of downloads consumed.



FESA has confirmed as recently as 6th April that “the service did operate effectively during that period.”

4.3 Actions subsequent to weekend of 5th and 6th February 2011

A request was received from FESA on Thursday 10th February to create a dedicated restricted SLIP WMS Service for “Incident Management” by FESA. This service enables FESA to input fireshape and roadblock data for multiple (3) concurrent incidents. This request was received at 11.00 AM on Thursday 10th February and restricted Incident Management Web Mapping Service (WMS) was created.

An FTP (file transfer protocol) site was established for FESA to remotely upload of New Incident Data and this was tested successfully by FESA. The request was completed and the facility was in operation by 3.00 PM on Friday 11th February.

Access to this service is administered by Landgate and SLIP Users are added to the FESA Restricted Access Role only at the request of FESA.

4.4 Notes on Agreements with FESA on SLIP services.

Landgate and FESA have cooperated closely on SLIP participation since the SLIP Project commenced in 2003.

Together with Landgate, FESA continues to be a member of the WALIS Operations Coordination Group (OCG); and with Emergency Services being one of four original SLIP Focus Areas, has developed the Emergeo application to support fire management services in Western Australia.

As a SLIP Data Custodian Agency, FESA is also a party to a Memorandum of Understanding on the provision of data for SLIP purposes. This agreement was signed in 2008.

In relation to consumption of SLIP services, there is no current agreement between FESA and Landgate; and access to SLIP data has continued ‘informally’ from FESA’s initial project involvement.

Discussions on a Service Level Memorandum of Understanding continue and centre around the issue of (24/7) support. One of the key issues is the cost of providing this level of support.

4.5 Notes on the 2005 *Inquiry into Fire and Emergency Services Legislation*

SLIP governance processes rely on custodian agencies being proactive in advising on the information they wish to provide or consume. Landgate responds to the requests of custodians to develop data services based upon these inputs. Under this model, Landgate is not in a position to ‘compel’ agencies to provide specific data, although Landgate does seek to influence the quality and completeness of data provided where this is desirable and possible. Access to both of the dedicated DEC and FESA fire management services in SLIP is controlled by those agencies

and Landgate provides individual or organisational access to these services as requested by SLIP 'sponsors' within those agencies.

Landgate notes the recommendations of the 2005 *Inquiry into Fire and Emergency Services Legislation* undertaken by the Community Development and Justice Standing Committee of the Legislative Assembly.

In regards to Recommendation 46 of this report:

- "Government should upload fire management plans to the Shared Land Information Platform thereby enabling access by key emergency services organisations".

Landgate is advised by FESA that 'fire management plans' are not defined and the term is used broadly and generically.

The following fire management *related* information is presently available through SLIP:

- Declared and Endangered Flora
- Karri Regeneration 0 - 50 years
- Threatened Ecological Communities
- Jarrah Regeneration 0 - 15 years
- Dangerous Goods Storage Sites
- Fuel Age / 50k 5 Year Grouping
- Fuel Age / 50k 1-20 Years
- Fuel Age / 50k 1 - 7 Years Fuel Age / 50k 1 - 7 Years
- DEC Managed Fires
- AirIntel Fireshapes (3)
- Roadblocks incidents (3)

This information is augmented and contextualized by the following information provided by Landgate:

- LGA's
- Townsites
- Localities
- Mapsheets
- Ward Boundaries
- Land Tenure
- Roads
- Roads - Processed
- Imagery Mosaics

FESA's Integrated Bushfire Risk Management System (recently developed) also uses this SLIP data and makes this available to ES personnel.

4.6 Interim arrangements for Emergency Support.

In support of Landgate's ongoing commitment to FESA, emergency access to Landgate staff and information has been provided for some years.

In 2010 this arrangement was reviewed and Landgate now provides access to an on-call IT Duty Manager for any issues relating to out-of-hours SLIP availability or performance; and to senior staff in our Operations Business Unit for emergency (manual) access to imagery and other data as may be required.

In addition, Landgate has an emergency contact person for all urgent mapping and imagery requests for all of government in case SLIP is not available.

To provide redundancy for SLIP, Landgate staff have also cooperated with FESA in the preparation of Data Packs for use in remote areas (without internet access) or where SLIP is unavailable for any particular reason.
FESA use Data Packs for accessing data and maps in the field to coordinate emergency response efforts such as mapping fire fronts, evacuation and traffic management.

4.7 Aerial Photography

Landgate which is responsible for State Land Information Capture Program SLICP which provides aerial photography to State and local Government agencies sought to acquire through its aerial photography contractor high resolution imagery of the affected areas. .the request was initially thwarted as the Western Australian Airport Corporation (WAC) had closed the cross runway at Perth Airport and as a result had restricted access the area where the fire area was located. Aerial photography was captured on 23 Feb 2011 and following processing was made available on 25 Feb.

5. Improvements that can be made in relation to the coordination of activities across all levels of government, including with volunteer groups.

5.1 Location Information Strategy

The 'Location Information Strategy' was endorsed by the Minister for Lands in October 2010. This strategy supports the implementation of a number of State government reforms aimed at enhancing collaboration and breaking-down silos across agencies, and promoting timely, evidence-based decision making.

Western Australia is already well positioned to deliver critical location information to support these priorities and reforms. For 30 years, the Western Australian Land Information System (WALIS), a partnership between local, state and federal government, the private sector and academia, has enabled a truly holistic approach to location information management in Western Australia. In addition, the Shared Land Information Platform (SLIP), an internationally recognised government information sharing capability, now provides shared access to a wide range of land and property information. SLIP is now connected to 25 agencies and delivers over 450 data sources online. FESA has developed an emergency management bureau

service that leverages SLIP to deliver a common operating picture for emergency response agencies during incidents.

Both WALIS and SLIP have produced impressive outcomes, making information access faster and simpler, helping to cut the cost of managing Western Australia's location information. However, as use of SLIP continues to expand, and FESA seeks to further enhance its emergency management capability, greater efforts will be required in the collection, management and use of Western Australia's location information across State Government and in partnership with industry. The Location Information Strategy for Western Australia will underpin these efforts by improving the quality and availability of location information used for emergency management, and by strengthening SLIP so it addresses rapidly expanding needs.

Importantly, the Location Information Strategy will also expand partnerships with the private sector and academia. These partnerships will be critical in ensuring investment made in location information and technology research by the Australian and State Government, and the private sector are applied more effectively to address the needs of the community – including emergency preparedness, response and recovery.

5.2 FireWatch

Firewatch is a collection of spatial information used for managing and monitoring bushfires and includes:

- Satellite imagery showing fire hot spots and fire burnt area
- hourly weather observations
- lightning strike locations
- most recent aerial photography
- a historical record of fire in Australia (from 1985)

In addition it has a FireEmail subscription service and a pilot Automatic Fire Notification Service that automatically send faxes or emails to subscribers when fire hot spots are detected in their area of interest.

Firewatch is primarily used by Fire and Emergency Services Authority (FESA) and Department of Environment and Conservation (DEC). However, it also provides national coverage to other government agencies and the general public.

The known limitations of Firewatch are:

- ***Coverage*** - The hotspots mapped are updated roughly every 2 to 4 hours depending on the availability of satellites.
- ***Accuracy*** - The accuracy of the hotspot location is +/- 2 km. At the edge of satellite images the position of the hotspots can be up to 5 kms out and spread in an east / west direction.

- ***Knowledge of Fire Severity*** - The symbol used to represent hotspots on the website does not indicate the size of the fire.
- ***Detection*** - With automated methods of fire hotspot detection, not all hotspots are detected by the satellites. Some heat sources may be too small, not hot enough, or obscured by thick smoke or cloud. The satellites detect any heat source that is hotter than its surroundings or looks hotter than its surroundings. This may include gas flares, refinery furnaces or highly reflective large industrial roofs.

Landgate, with its partners of FESA and UWA are developing an improved Firewatch service that will:

- Integrate bushfire spread modelling developed by UWA into FireWatch to predict fire spread through a Department of Broadband, Communications and the Digital Economy Digital Regions Initiative (DRI) project;
- Provide a capability within the Incident Control Centre to use more up to date information to quickly assess impacts of changing weather and fire conditions on predicted bushfire spread; and
- Provide a better user interface for both general public and professional users and develop additional data layers that meed the needs of users within the WA government as part of a National Disaster Resilience Package (NDRP) project.

There was a 10 fold increase in the use of the FireWatch webservice during the Perth Hills Bushfire. No FireEmails or Automatic Fire Notifications were sent during the event as no one had subscribed to the affected areas as an area of interest.

For more detail on Firewatch, see Appendix A.

5.3 Address

- Landgate manages and maintains WA's authoritative property street address database and provides a street address verification service (AVS).

- AVS is used by FESA's State Alert system, to validate address of new non automatically registered phone numbers by Telstra Location Based Number Store (LBNS). Further details on the application of State Alert would need to be provided by FESA.

- Landgate has a Service Level Agreement with FESA for the provision of the AVS. State Alerts registers addresses automatically created by the Telstra's LBNS, if AVS was unavailable. The manual registration process of non land line phones is available through the AVS web look up service from Landgate.

- Questions in relation to Telephone numbers geocoded to a property is outside of Landgate's Role and would need to be responded to by FESA's GIS section and or Telstra

- There was no known feedback received in Landgate's Address Team relating directly to this fire event during the event or as a consequence of the event.

- Urban and Rural addressing is currently implemented across the Perth Hill region. Address allocations are administrated by the relevant Local Governments and notified to Landgate on regular cycles.

- Landgate has an ongoing program to revisit Local Governments Address data to constantly improve data quality by undertaking whole of Shire address matches to ensure that address data is consistent between LGA and ADR.

- Landgate supplies current address data to other agencies as requested by the agency. FESA are an agency that obtains this data directly from Landgate.

- Telstra also obtains monthly incremental updates of Address Data direct from Landgate. How this data is used to support Location Based Number Store (LBNS) would need to be answered by Telstra.

5.4 Volunteer Program

Landgate understands that during the Roleystone Fire disaster FESA Geographic Information Systems (GIS) officers worked around the clock to deliver mapping products. FESA Executive wanted to make sure it had sufficient resources to ensure adequate mapping and GIS capability was available in the event of additional events and requested Landgate to assist by coordinating the provision of additional human and computing resources from across public sector mapping agencies. This volunteer support was implemented immediately resulting in 35 GIS officers from across government being available to assist FESA in rapid response mapping and information coordination roles. Landgate understands this volunteer arrangement is currently being considered as a more formal arrangement for future bush fire seasons.

Appendix:

A. Detailed information on Firewatch

Appendix A

Detailed Information on Firewatch

FireWatch – What is it?

Established in the 1990s, FireWatch is the WA Government's preferred satellite-based bushfire monitoring service. FireWatch has been monitoring bushfires across all of Australia for 12 years and is currently used by emergency services agencies in WA, NT, SA, Tasmania and Qld. FireWatch is also accessed by the public across Australia and currently provides a bushfire alert service (notifying subscribers of bushfires detected within a pre-defined radius of their property) via email. FireWatch generates the following critical bushfire information, which is then delivered via the internet to emergency services agencies and members of the public across Australia:

- detection of fire hotspots.
- monitoring the spread of bushfires.
- monitoring lightning strikes.
- curing index (measuring the amount of plant matter and dryness of that plant matter).
- annual burnt area mapping and fire scar mapping (which shows the annual extent of fire damage across Australia and used in fire management).

Data from two satellite constellations are used for producing fire hotspot (FHS) and fire burnt area (FBA) in FireWatch: MODIS (Moderate Resolution Imaging Spectroradiometer) from Terra and Aqua, and AVHRR (Advanced Very High Resolution Radiometer) from NOAA15, 16, 18 and 19. Both satellite constellations are owned by the United States. There are technical differences in the two satellite constellations that impact the quality and limitations of FireWatch.

Both MODIS and AVHRR produce data in the visible as well as thermal parts of the electromagnetic spectrum. For FHS locations the thermal data is used. The size of one dot or pixel in these thermal sensors is 1 kilometre. The data from the satellites is remapped on to a map grid for display on the FireWatch website. This remapping has an error of up to 1 km. Combining the pixel size and the remapping errors results in uncertainties in position of FHS of up to 2-3 km. In addition, there can be a broadening effect from the NOAA sensor on the east and west edges of the satellite passes resulting in pixel duplication and increased positional uncertainty. On occasion this produces an east-west spread of one original FHS to up to 4 repeated FHSs in a roughly east-west line. These issues were present during the Perth Hills Bushfires.

The Fires:

Bushfires were located by the satellites used by Landgate near Perth on the 5th, 6th and 7th of February 2011. One fire was located near Roleystone and another near Herne Hill.

Herne Hill:

Timeline of Fire Hot Spot detections for Herne Hill Fire:

Date	Time of satellite pass	Source
5 February 2011	2256	MODIS
6 February 2011	0034	MODIS
	0011	AVHRR
	0158	AVHRR
	0211	MODIS
	0244	AVHRR
	0343	AVHRR
	0521	AVHRR
	0628	AVHRR
	0957	MODIS
	1415	MODIS
	1425	AVHRR
	1511	AVHRR
	1744	AVHRR
	1855	AVHRR
	2035	AVHRR
	2340	MODIS
7 February 2011	0147	AVHRR
	0156	MODIS

MODIS detections -
The fire was first located in a Terra satellite pass at 2256 WST on 5 February 2011, see Figure 1 (this and all subsequent Figures are screen snapshots from Landgate's FireWatch website). The processed data first became visible on the FireWatch web site at 2315 WST on 05/02/2011 (it took 19 minutes from reception to delivery of information to the website).

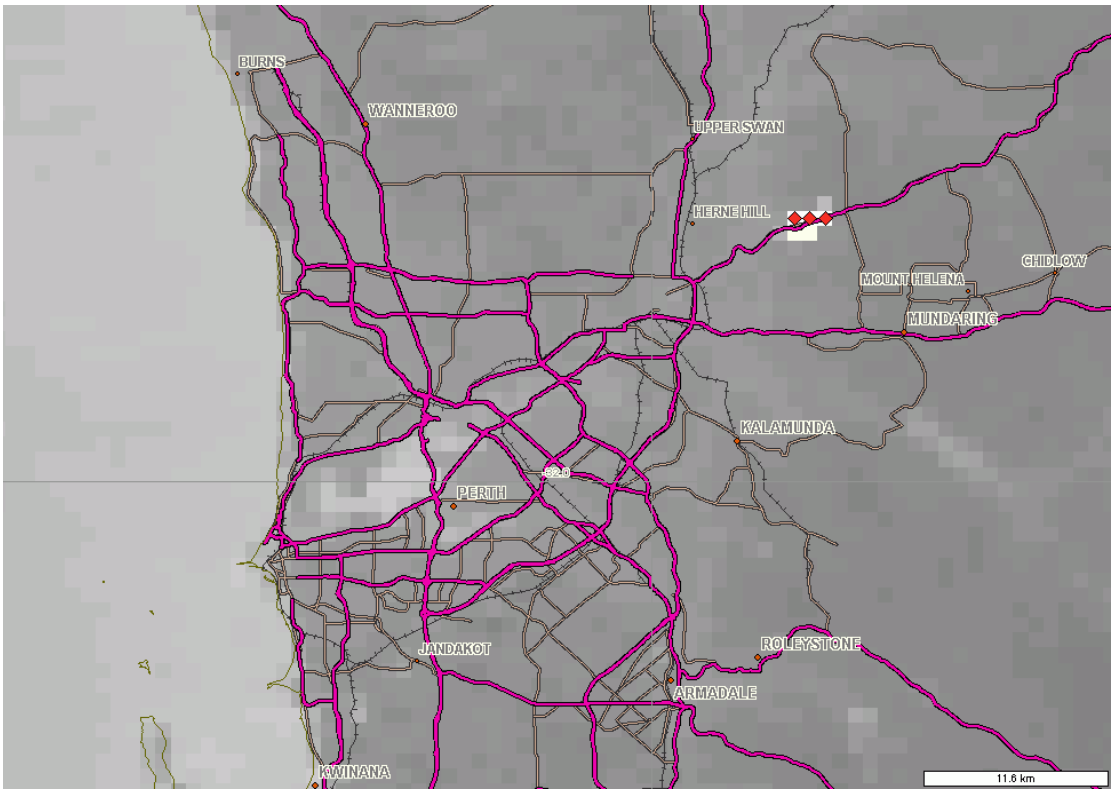


Figure 1: Terra MODIS satellite pass at 2256 WST 05/02/2011. The underlying image is temperature with white being hot. Automatically detected fires are Diamonds.

Subsequent passes using the MODIS sensor detected fires at 0034, 0211, 0957, 1415 and 2340 on 06/02/2011and 0116 on 07/02/2011. The pass at 1040 on 07/02/2011 showed no FHS in this area, but did show a resulting fire scar, Figure 2.

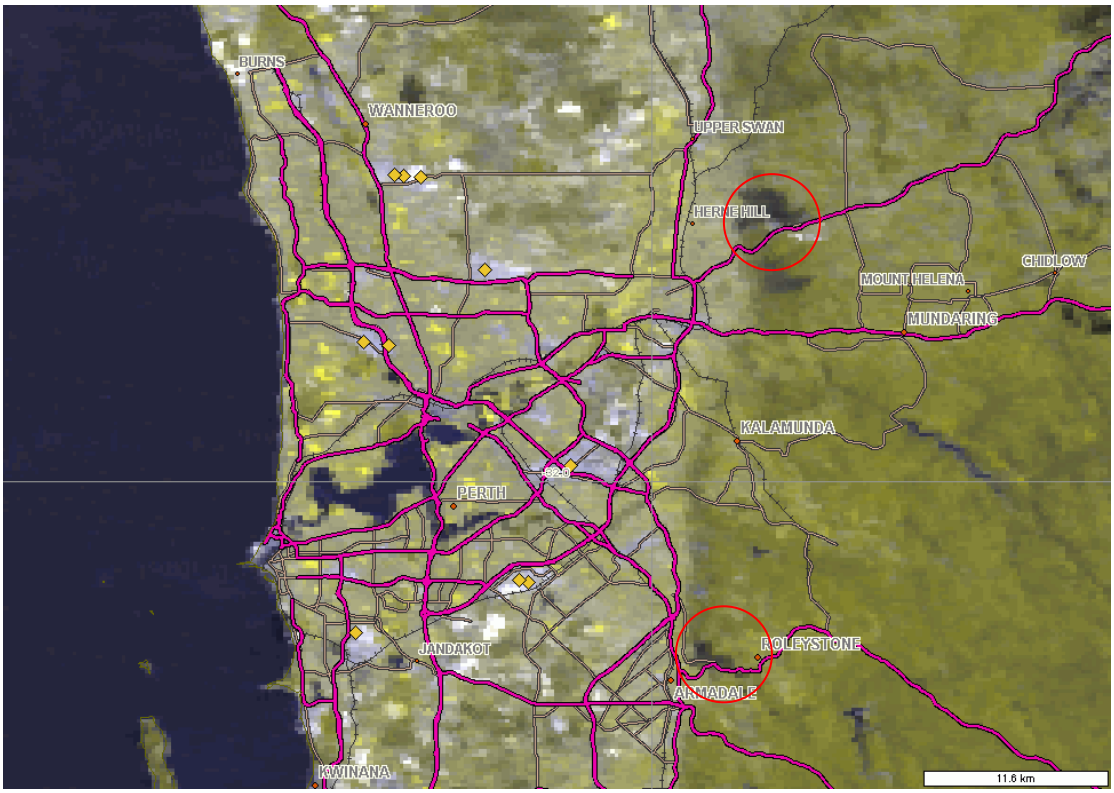


Figure 2. Terra MODIS satellite pass at 1040 WST 07/02/2011. Colours are false colours, using red and near infrared channels from the MODIS satellite. Fire burnt areas are circled in red.

NOAA-AVHRR data-

The Herne Hill fire was first detected using the AVHRR sensor on the pass received at 0011 WST 06/02/2011 on the NOAA 19 satellite and became visible on the FireWatch web site at 0053 WST on 06/02/2011, Figure 3. This pass had Perth near the edge of the pass, hence the east-west spread of the white (hot) area. The data near the edges of satellite passes are not processed for automatic fire location, hence the lack of individual FHS in Figure3

NOAA satellite passes at 0158, 0244, 0343, 0521, 0628, 1425, 1511, 1744, 1855 and 2035 WST on 06/02/2011 and 0147 WST on 07/02/2011 also detected fire in this area.

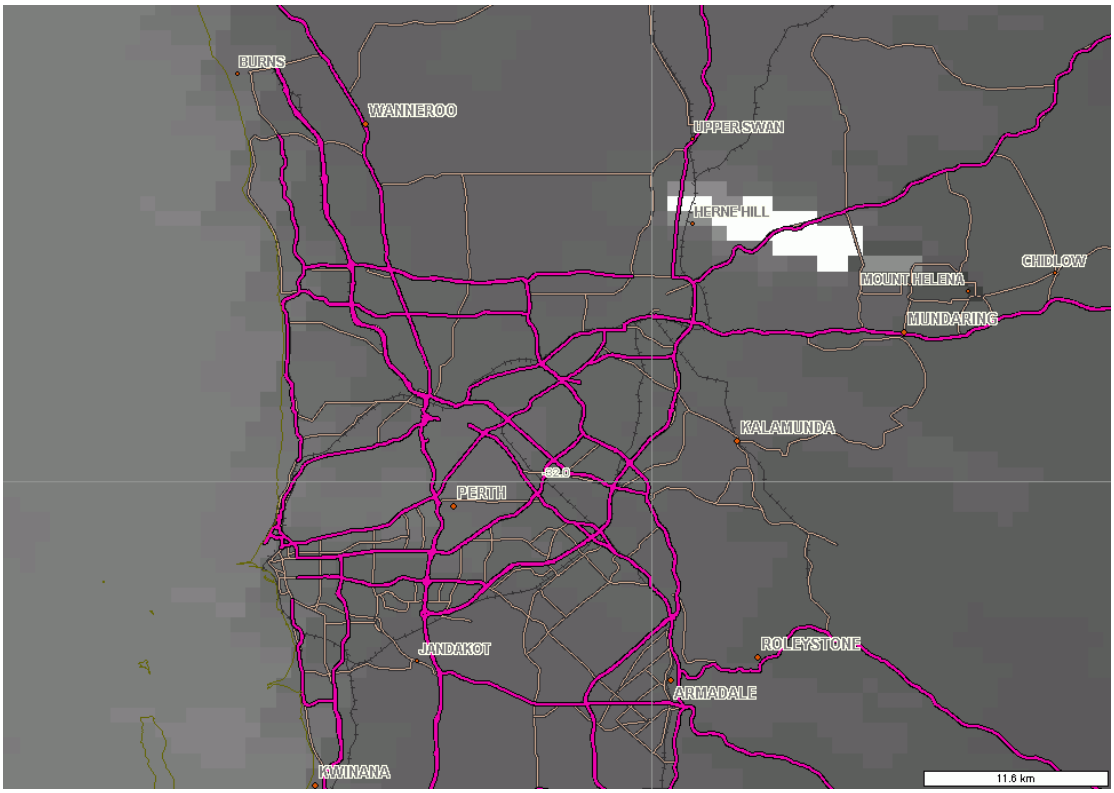


Figure 3. NOAA 19 satellite pass at 0011 WST 06/02/2011.

The first pass using the AVHRR sensor which detected fires automatically was the next available NOAA pass, at 0103 WST 06/02/2011 from the NOAA 18 satellite Figure 4.

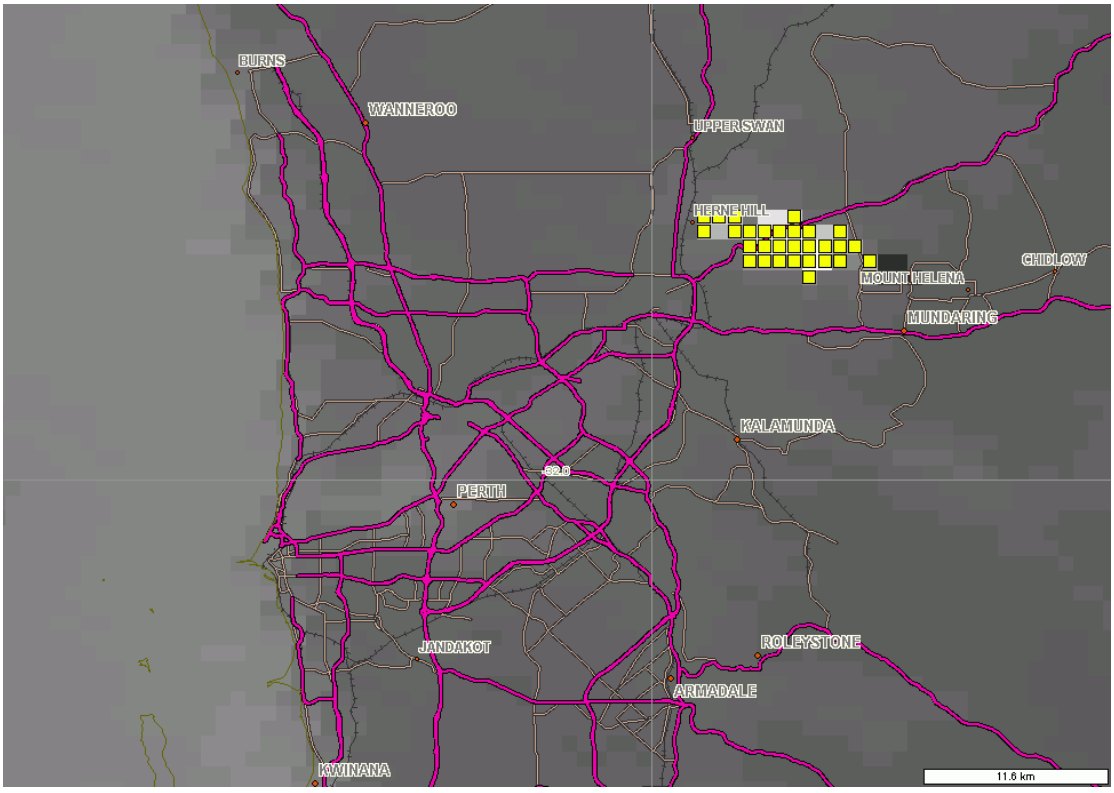


Figure 4. NOAA 18 satellite pass at 0103 WST 06/02/2011. Here the automatically detected fires are Yellow Squares.

Roleystone:

Timeline of Fire Hot Spot detections for Roleystone Fire:

Date	Time of satellite pass	Source
6 February 2011	1415	MODIS
	1425	AVHRR
	1511	AVHRR
	1744	AVHRR
	1855	AVHRR
	2035	AVHRR
	2340	MODIS
7 February 2011	0053	AVHRR
	0116	MODIS
	0147	AVHRR

MODIS data-
The Roleystone region fire was first located in a satellite pass at 1415 WST on 6 February 2011, see Figure 5. The processed FHS data first became visible on the FireWatch web site at 1453 WST on 06/02/2011, with the imagery at 1503 WST. The smoke plume from the Roleystone fire is also visible.

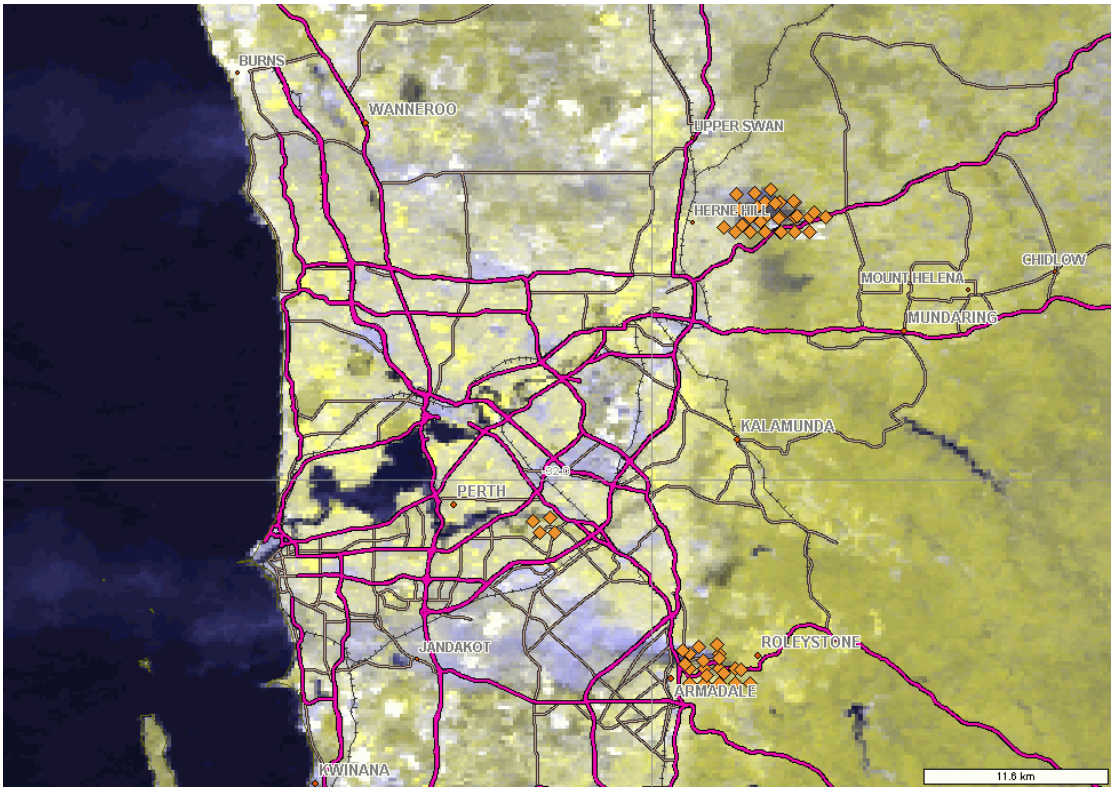


Figure 5. Terra satellite pass at 1415 WST 06/02/2011. Here the automatically detected fires are Diamonds.

Subsequent passes using the MODIS sensor detected fires near Roleystone at 2340 WST on 06/02/2011 and 0116 WST on 07/02/2011. The pass at 1040 WST on 07/02/2011 showed no FHS in this area, but did show a resulting fire scar, Figure 2.

NOAA-AVHRR data-

The Roleystone fire was first detected using the AVHRR sensor on the pass received at 1425 WST 06/02/2011 on the NOAA 19 satellite and became visible on the FireWatch web site at 1447 WST on 06/02/2011, Figure 6.

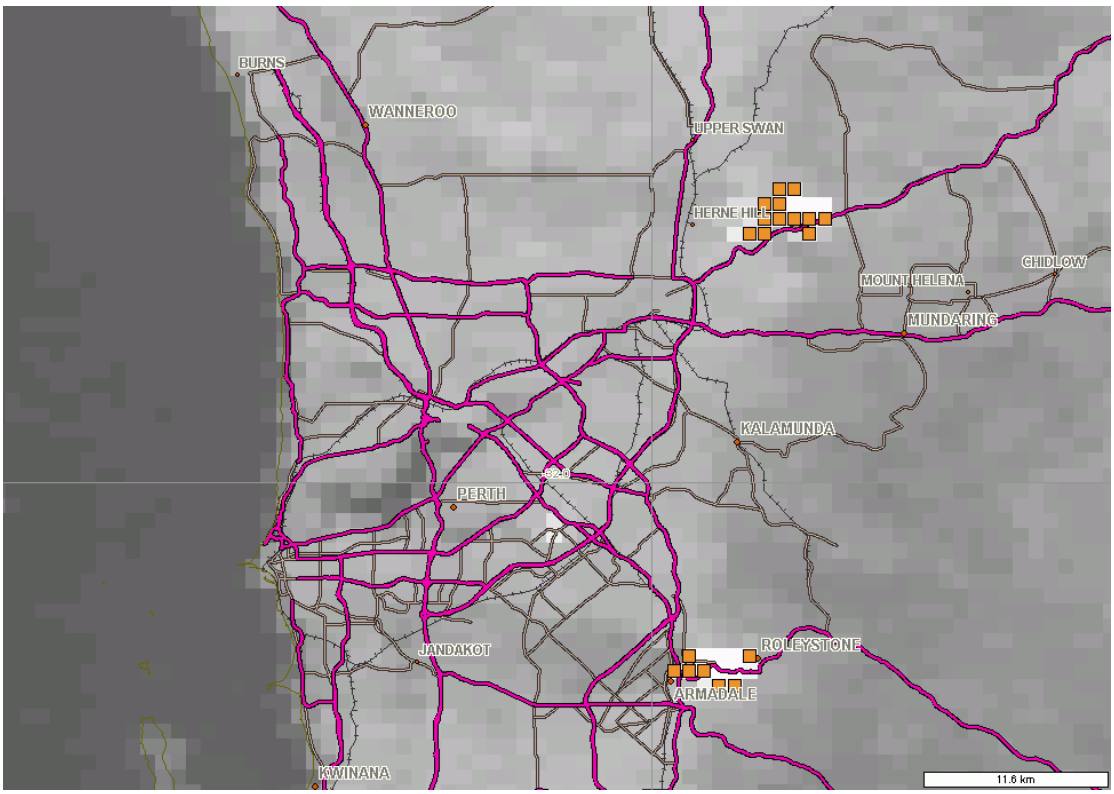


Figure 6. NOAA 19 satellite pass at 1425 WST 06/02/2011. Automatically detected fires are Squares.

NOAA satellite passes at 1511, 1744, 1855 and 2035 WST on 06/02/2011 and 0053 and 0147 WST on 07/02/2011 also detected fire in this area.

The Department of Broadband, Communication, and the Digital Economy Digital Region Initiative Project

The project will expand the functionality of the FireWatch service to include these new features:

- Bushfire Simulator:
    - will simulate and predict the spread of current bushfires
    - will generate Bushfire Simulation Maps
    - to rapidly model and test a range of bushfire fighting techniques (such as choosing the best place to install a temporary fire break or to begin back burning) against the current fire by running the Bushfire Simulator on the FireWatch website to decide on the most effective tactical response to that particular fire.
- Bushfire Alerts – which will provide SMS alerts of nearby bushfires to users across Australia and encourage those users to check the FireWatch website to see the Bushfire Simulation Maps
- Bushfire Prediction Planning Tool
  The Bushfire Prediction Planning Tool can be used to:
    - model bushfire management interventions (fire breaks, controlled burning, etc) to assess the effectiveness of those interventions in protecting property or infrastructure in any chosen location in Australia. .
    - Perform a Bushfire Risk Assessment on all current and future infrastructure
    - Assess what changes to the location and layout of the infrastructure could be made to reduce the bushfire risk.

The project will also develop an interface between the UWA Simulator and FESA's Geographic Information System to allow for the use of the Simulator in an operational role within FESA to assist with risk assessment during an incident as well as to model various mitigation scenarios outside of fire incidents.

Submission to the
Perth Hills Bushfire February 2011 Review

Submissions should be submitted electronically (preferred) to:

or posted to:

Perth Hills Bushfire February 2011 Review
Locked Bag 10, Cloisters Square
PERTH WA 6850

Note: All submissions received will be made available on the Inquiry's website. People wishing to make a confidential submission should make this clear at the time of lodgement and the Inquiry will not publish those submissions**.** However, people should be aware that whilst every endeavour will be made to ensure confidentiality, there is a possibility that such submissions might be released in accordance with the *Freedom of Information Act 1992.*

Contact Details

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Email address:	
Telephone number:	

Organisation Details (Where Applicable)

Is this submission presented on behalf of an organisation:	No
If yes, name of organisation:	
Position in organisation:	

Response to Terms of Reference

You must address at least one of the Terms of Reference.

1. The adequacy of current preventative measures, specifically prescribed burning and other bushfire mitigation activities.

2. **The impact of land use, environmental and building laws, practices and policies in the affected areas, affecting bushfire prevention, mitigation and response and what, if any, changes may be required.**

3. **The actions that can and should be taken by landowners, residents and tenants in relation to bushfire risk management including undertaking vegetation clearance, operation of evaporative air-conditioners and storage and/or removal of hazardous inflammable material surrounding their dwellings and buildings. This should include consideration of associated enforcement regimes and penalties.**

4. **The adequacy and effectiveness of information and communication campaigns and mechanisms, including systems for alerting residents in relation to the fire or potential fires.**

5. **Improvements that can be made in relation to the coordination of activities across all levels of government, including with volunteer groups.**

Submission to the Perth Hills Bushfire February 2011 Review

Max & Barb Margetts,

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1 The adequacy of current preventative measures, specifically prescribed burning and other bushfire mitigation activities.

The impact of complacency

This submission primarily deals with fundamental changes to land management that should be implemented within the urbanised and semi-rural area of the Perth hills.

It is our contention that the Perth hills community is either unaware of, or is in denial as to the primary reason why the Kelmscott fire burned with such ferocity that it literally exploded above trees and remnant scrub as it roared through the valley. Certainly the windy conditions of that weekend played a part, but then every significant bush fire here and elsewhere in Australia has had strong winds as a contributing factor.

The magnitude of this fire and the increasing prevalence of bushfires in this part of Perth demonstrate the need for a more reasoned and ultimately more sustainable fire-protection response by all tiers of Government and by all members of the community.

In this context we are also conscious of the threat posed by uncontrollable wildfires that emanate from outside of the urbanised area. A catastrophic fire could have enveloped Roleystone and Kelmscott as a consequence of the 2005 Perth hills bushfire and we have vivid memories of the ash and burning eucalypt foliage that rained down on our house and yard at that time. Even though the 2005 fire was halted before it reached our locality, we understand that were it not for a fortuitous wind shift this whole district could have been consumed.

The proceedings, findings and recommendations of numerous eastern states fire enquiries have typically referred to the Western Australian experience with hazard reduction burning. While the Western Australian model has often been cited as one that should be emulated in fire-prone areas in the eastern states, it would appear that the ability of land managers here to undertake a safe programme of mosaic hazard reduction burns in this region has been constrained in recent years by unfavourable weather conditions, including an increasing prevalence of warm to hot, windy days through much of autumn and spring.

With predictions of a drier and warmer climate in the future and the likelihood that major fire events will be more common, it would be wise to question whether an over-reliance on prescribed burning in this State offers an adequate level of protection from bushfires for Perth hills communities.

Many people have commented that up until 20 years ago, the bushland around Roleystone and Kelmscott was regularly burned by CALM and the volunteer brigades. In many respects, this led to a false sense of security amongst newer residents. We, like many other idealistic settlers from the suburbs, imagined a life "amongst the gum trees" and sought out a block of land in a natural bush setting on a hillside with a view.

The truth is that as a hills community, we have been in collective denial for decades about the extent of the extreme fire hazard that exists in the stands of eucalypts, pines and conifers that are located around and between most of the houses and semi-rural properties throughout the Kelmscott and Roleystone hills area.

We have naively relied on regular burning of the bushland beyond to safely sustain our romantic view of life in the bush. Now that regular, controlled burning is unsafe for much of the year and is increasingly resisted on environmental grounds, this at risk community needs to take a far greater level of responsibility for reducing the fire hazard closer to home.

We need to make a sustained effort to reduce the fire potency of unmanaged eucalypts and other fire fuelling vegetation within the peri-urban area of the Perth hills. This change in thinking is unavoidable if we are to come to terms with, and adapt to rapidly changing climatic conditions.

The disastrous outcomes of the Sydney, Canberra and Victorian bushfires over the last decade or so, and the tragic consequences of recent bushfires in this State has instilled upon us the need to come to terms with the latent fire hazard that exists within the hills and the Canning River valley in Kelmscott and Roleystone.

A few years ago after the Victorian fires, we started to change the planting regime in our own garden, planned modifications to our house and took action to install sufficient water storage to supply an independently powered bush fire sprinkler system.

Since the February 2011Kelmscott fire we have stepped up our consideration of bush fire protection to include the largely unmanaged fire hazard that lies within a 250 metre radius of our property.

By interpreting the "methodology for determining bush fire hazard level" and the "acceptable solutions" hazard mitigation measures spelt out in Appendix 1 and Appendix 2 of the "Planning for Bushfire Protection Guidelines" (FESA, WAPC, May 2010), it is relatively easy to identify how much of the existing vegetation regime in and around established properties needs to be modified.

If we apply the PBPG hazard assessment method to the cluster of fire-affected properties between Greendale Place and Grade Road in Kelmscott, we find that this closely settled pocket of land would likely score a moderate to extreme Bushfire Attack Level (BAL).

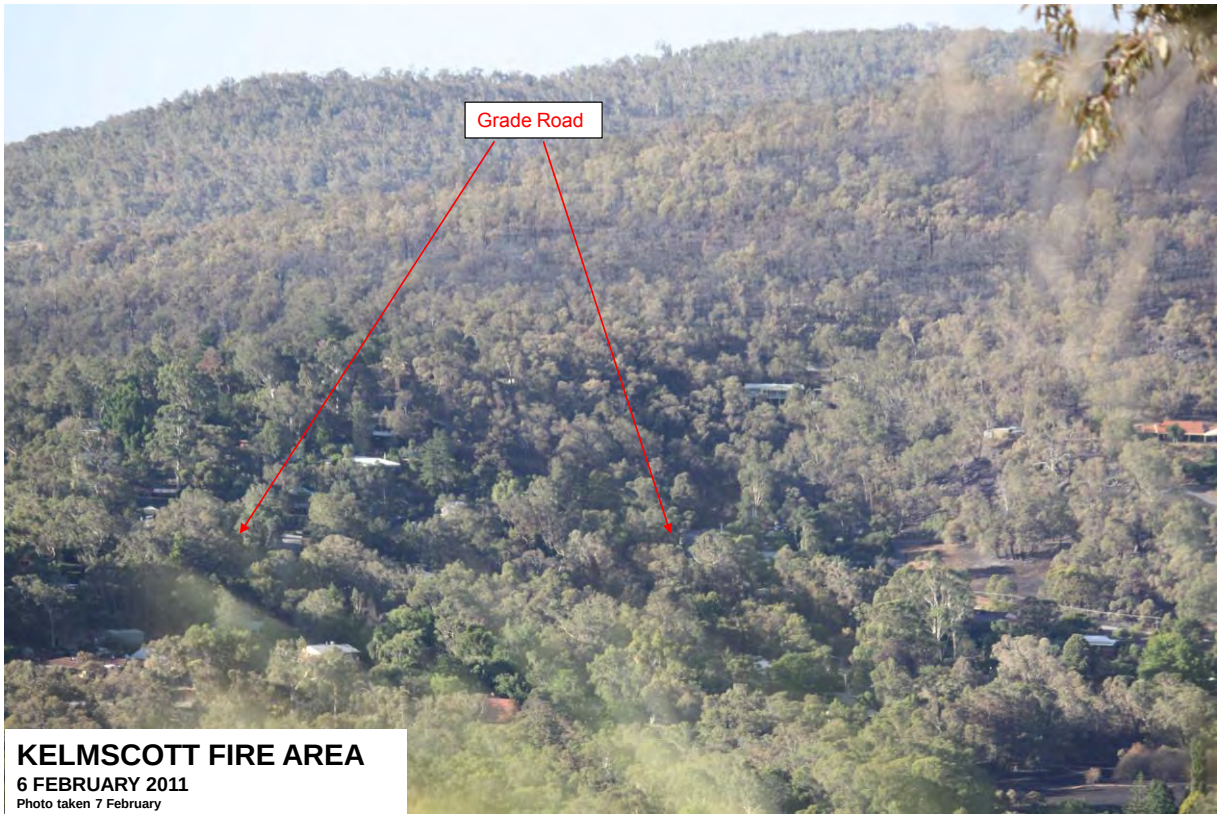
It is sobering to note that 11 houses burnt to the ground within 250 metres of our property in . Scores of other houses within this pocket of Kelmscott may

well have burned, had it not been for the timely arrival of helicopter water bombers and the persistent efforts of a few local residents who chose to “Stay and Defend”.

KELMSCOTT FIRE AREA (area between Greendale Place and Grade Road)
Impact of inadequate “building protection zones” around houses clearly evident in aerial photos captured: 2nd July 2009 and 15th February 2011

This level of risk did not exist in the past. Over the 35 years since we purchased our property, we have witnessed residential infill and the incremental and unmanaged growth in scale and density of a mixed landscape of eucalypts, pines, conifers, paper barks, wattles and other volatile vegetation around houses in our immediate surroundings and across the valley.

Where previously you could clearly see the houses in our street from elevated positions on the southern side of the valley, the scene from the same vantage points now is best described as re-consolidated woodland with houses nestled under and between the eucalypt and pine tree canopies. Much of the valley landscape around where we live looks disturbingly similar to that depicted in Diagram E4.3d and E4.4d of Appendix 2 in the “Planning for Bush Fire Protection Guidelines” (refer to extract below).



Existing extent of woodland vegetation around houses between Buckingham Road and Canning Mills Road – photo taken from ridge on southern side of Canning River valley

E4.3d and E4.4d Building protection zones – unsuitable development

The maintenance of building protection zones must be able to be guaranteed across lot boundaries through the implementation of the local government fire break notice.

Where this is not done, the development becomes unsuitable, even if it had been originally designed and developed in a suitable manner.

Diagram E4.3d and E4.4d An unsuitable development - building protection zones do not exist in this development due to the poor maintenance of fire breaks and by allowing too much vegetation to intrude into the building protection zones. (Ref P4, A4.3, A4.4)

Extract: "Planning for Bush Fire Protection Guidelines" Edition 2 May 2010, WAPC, Department of Planning, FESA

Many of the eucalypts around houses up and down our street are varieties that shed strips of bark and dry limbs in summer and spread prolifically across properties in winter from wind-blown seed.

In an established residential area, modifying and managing the vegetation regime is easily the most practical way to mitigate a high level of fire risk. Essentially, this means working with neighbours across property boundaries to remove hazardous eucalypts and other volatile vegetation within the critical 20 metre "building protection zone" of houses. In some instances, it may be appropriate to replace incendiary eucalypts, conifers and pines with safer (generally deciduous) fire-retardant species.

2 The impact of land use, environmental and building laws, practices and policies in the affected areas, affecting bushfire prevention, mitigation and response and what, if any, changes may be required.

Land use, environmental and building laws, practices and policies

Between spring and autumn in the Perth hills, the level of fire risk to assets is compounded by proximity to highly flammable, tinder dry vegetation, steeply sloping topography and persistent, katabatic winds.

The recent Kelmscott fire has exposed a glaring weakness in the statutory and policy framework that governs land use and fire hazard management in the hills area.

In the City of Armadale, as far as we are aware, the provisions of the "Planning for Bush Fire Protection Guidelines" have only been applied to pockets of new development that have been defined as "prime bushfire hazard protection areas" under Town Planning Scheme No.4. This means that the vast majority of property owners in the hills area, including those whose properties have an inherently high level of risk, are not required to comply with an effective hazard reduction strategy.

In the wake of the Kelmscott fire, Government agencies need to complete a comprehensive AS 3959 method fire risk assessment across all the peri-urban areas of the Perth hills (and elsewhere) to model the actual level of fire risk to communities. The results of this assessment and the consequences for property management need to be clearly mapped and described in an accessible format that can be widely disseminated to affected communities.

A realistic assessment of fire risk over the affected area of Kelmscott should be given priority to ensure that landscape restoration and rebuilding is based on sound planning information.

Once the levels of risk have been identified, it follows that the State Government should work with local governments to prepare "property blind", Bushfire Protection Strategies drawing on the methodologies, planning principles and solutions in the "Planning for Bushfire Protection Guidelines" and AS 3959 (as amended).

The implementation of recommendations emanating from Bushfire Protection Strategies poses a number of challenges for Government including:

- the development of a well resourced information and education program (similar in scope and effectiveness to the "Water-Wise" program)
- a suitable legal framework for enforcing retrospective land use controls. In this context, the powers of FESA, the Department of Local Government and the Western Australian Planning Commission will need to be carefully examined to find mechanisms and procedures that will achieve an effective level of compliance.

We do not underestimate the extent or complexity of the challenge and we would favour an approach that avoids at least some of the more onerous provisions of Section 6.7 of the City of Armadale Town Planning Scheme No.4

One option that is worthy of consideration is to put more effort into FESA'S community oriented "Bushfire Ready Action Group" initiative with the aim of getting individual property owners to work together to implement the 20 metre "building protection zones" and the 100 metre "hazard reduction zones" referred to in the "Planning for Bushfire Protection Guidelines".

Bushfire prevention, mitigation and response

Many of us who were evacuated from the fire-zone have thought deeply about the consequences of the "Stay or Go" Policy and its implications for the protection of property if FESA is either unable or unwilling to commit sufficient fire fighting resources to protect individual properties from damage or destruction.

In the case of the Kelmscott fire, incident controllers and fire officers on the ground made sweeping statements during and after the fire about decisions that were made to put the protection of lives ahead of the protection of property. This response was so risk averse as to be ridiculous in instances where it was evident that public and private assets could have been safely protected from damage or destruction by the deployment of rudimentary fire fighting equipment, including accessible garden hoses.

We understand from the accounts of witnesses, that many of the houses and other assets that were either damaged or destroyed in our area actually caught fire as a consequence of ember attack and spot fires well after the passage of the fire front. The practicality of dealing with spot fires and ember attack after the fire front had passed was shown to be within the capability of a number of local residents who chose to "Stay and Defend". This echoes similar findings that came out of the disastrous Canberra fires.

It is evident that a second wave of personnel is needed on the ground to mop up and put out spot fires once the fire-front has passed. This second wave of personnel could be comprised of a combination of State Emergency Service volunteers and a limited number of capable and suitably equipped local residents, aided as necessary by the available resources of the professional and volunteer brigades.

3 The actions that can and should be taken by landowners, residents and tenants in relation to bushfire risk management including undertaking vegetation clearance, operation of evaporative air-conditioners and storage and/or removal of hazardous inflammable material surrounding their dwellings and buildings. This should include consideration of associated enforcement regimes and penalties.

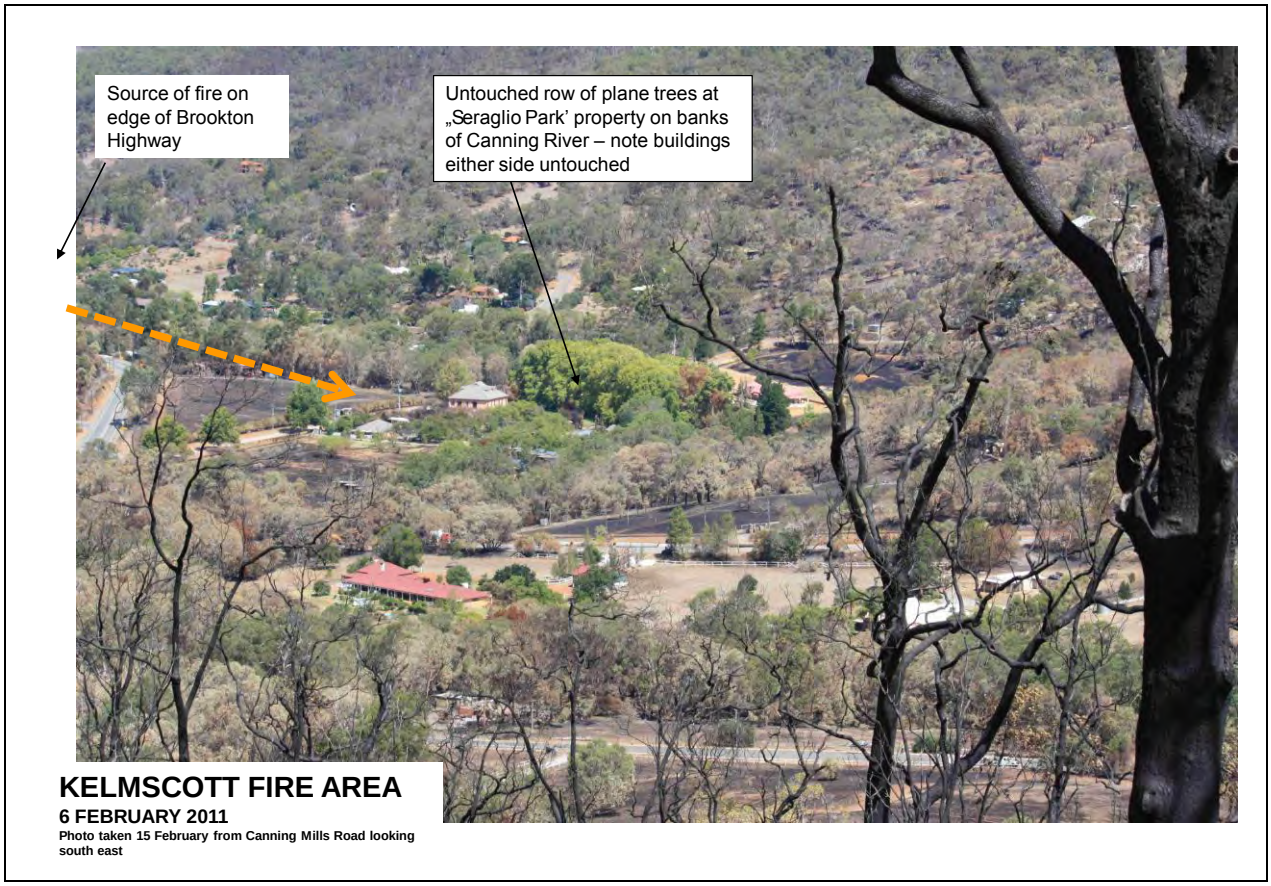
Managing the peri-urban landscape to retard bush fires

Experience from bushfires across Australia, including the 2011 fire in Kelmscott has shown that the planting of fire-retardant plants in residential gardens; semi-rural properties; urban parkland; and alongside road verges can slow the progress of a fire because the energy required to combust the foliage is greater than the energy released from that combustion.

On the other hand, fire-accelerant vegetation such as gum trees, bottlebrush, tea-trees, conifers and pine trees contain volatile oils and resins and release a lot of energy when they burn, increasing the ferocity of a fire and enabling it to spread further and faster.

Gum trees are unfortunately the most hazardous trees to have near your house in fire-prone areas. In fact some gum trees will ignite at 60º C and many shed masses of dry bark, leaves, twigs and branches – particularly at the height of the fire season when gum trees are most under stress.

Fire-retardant trees and ground covers provide less fuel; they can act as heat shields screening buildings from radiant heat; they can reduce or deflect fire winds; the screening foliage of retardants can intercept flying embers, causing them to die out harmlessly; and retardants typically create a humid zone around themselves which is generally not conducive to fire.



Effect of fire-retardant trees at „Seraglio Park' along the edge of the Canning River is clearly evident in this photo

Adapting Buildings

To mitigate the risk to assets within private properties, we see a need to make the technical detail of the "Planning for Bush Fire Protection Guidelines" and Australian Standard AS 3959 more readily available and understood so that property owners can make feasible modifications to their houses and other assets.

Modifications to established residential buildings should focus on reducing or eliminating exposure to flammable materials (including volatile trees and shrubs), eliminating ignition sources and minimising exposure to ember attack. Relatively simple modifications to the design of evaporative air conditioners to physically exclude embers with metal screens and/or the adoption of fire-retardant pad materials would help to eliminate that source of fire transmission.

Following the Victorian Bushfires, a number of informative publications were produced to inform property owners how they could make suitable modifications to their properties to exclude fire embers. Eliminating gaps across the external building fabric of buildings is a good place to start.

In many cases older style hills houses (including ours) were not designed with the benefit of contemporary fire protection guidelines and building standards and the opportunities for structural retrofitting may be limited. In such cases achieving better fire protection may need to include the installation of independent fire fighting systems

and equipment, including the provision of an independent water source and an independently powered fire pump and bush fire sprinkler system.

We are waiting for an Australian Standard for Bushfire Sprinkler Systems to be finalised before we hire a contractor to install the copper piping and sprinkler components of our planned system because we want to be confident that the package will contribute to the protection of our assets and qualify for a concession on our property insurance premium.

4 The adequacy and effectiveness of information and communication campaigns and mechanisms, including systems for alerting residents in relation to the fire or potential fires

Information and communication campaigns and mechanisms

FESA has already produced a great deal of informative material that can be accessed through their website. From our discussions with other people who live in the fire area, it is evident that not much is known about this material or how to best apply the many strategies and checklists to their own situation. The "BRAG" initiative which we have referred to elsewhere in this submission, provides a ready vehicle for expanding the reach and application of many of the strategies dealt with in the FESA material.

The recommendations of the final report of the Victorian Bushfire Royal Commission provides a good insight into the kind of information that needs to be made available, including free access to the Australian Standard AS 3959.

The Royal Commission also recommended that the CFA should prepare suitable information to help property owners and managers select plants for residential and rural properties that will not readily burn or fuel the passage of bushfires. Action on this issue should be expedited in Western Australia and the information needs to be widely disseminated to the public and major stakeholders through all tiers of Government.

Knowing that people in our fire-affected area are already re-planting gardens, we approached the City of Armadale after the fire and suggested that the City give consideration to publishing and distributing an interim guide to the selection of fire-retardant plant species. To their credit, the City took up our offer to assist with the preparation of such a guide and copies of the resulting booklet are now available from the City offices. To be effective however, this type of information needs to be widely circulated and reinforced through an ongoing community education program.

To complement action on this issue, the Water Corporation should be asked to amend its "Water-wise" gardening campaign to recognise that the use of flammable native plants is not recommended within the 20 metre "building protection zone" of houses in fire prone areas.

Fire information and fire-alert systems

Much has already been said and written elsewhere about the effectiveness or otherwise of the existing systems. There is little doubt that both the radio warnings and SMS messaging systems need to be improved if they are to provide reliable and timely information for people affected by bushfires.

In our view the content and timing of the material being broadcast during the Kelmscott fire was so vague as to be unhelpful for the most part. That did not really concern us in the period leading up to the fire front arriving because we have learned over the years to keep an eye on the outside environment through summer and particularly during periods when we know there is a high likelihood of fires in the valley. We made our own decision to evacuate well ahead of the fire front arriving.

The really frustrating issue for us was not being informed as to the status of the fire in our street in real time once we had evacuated the property. People watching television news broadcasts seemed to be better informed than those of us who were waiting around in evacuation centres and shopping centre car parks. In the end, we found out about the fire status of our house from information passed on by a neighbour whose husband stayed behind to defend their property.

You can sit at home in Perth and follow practically any disaster on earth in real time and yet here we seem to think useful information on the progress of a bushfire should be held back from those who have the most at stake. In our experience, the trickling out of official information was at least as stressful as the fire itself and this issue could be better handled in the future.

5 Improvements that can be made in relation to the coordination of activities across all levels of government, including with volunteer groups.

Throughout this submission we have sought to emphasise the value of pursuing a collective and informed response to bush fire protection in the Perth hills.

We see a glaring need to more widely apply the sound planning principles that underpin the Australian Standard AS 3959 and FESA's "Planning for Bush Fire Protection Guidelines" across all at-risk properties.

Consideration needs to be given to the role that FESA's "Bushfire Ready Action Groups" initiative could play as a vehicle for implementing aspects of local Bush Fire Protection Strategies. The "BRAGS" initiative could also be the vehicle for identifying capable and properly prepared local residents who can play a role in bush fire defence and in the post fire-front mopping up of spot fires and ember attacks.

We all need to accept a higher level of individual responsibility for fire protection and fire awareness in fire-prone areas. We as individuals as well as all tiers of government should also acknowledge the valuable role that collective civil defence can play in fire

management and fire recovery and this needs to be given due recognition in the policy and legal framework of Government.

As a final thought, we suggest that FESA join with each of the responsible local governments in the Perth hills to sponsor and promote local “Fire-wise” garden and landscape competitions every year ahead of the fire season to encourage property owners to make the landscape changes that are needed to reduce the fire hazard. The annual event could be co-ordinated with Australia’s “Open Garden Scheme” to allow people the opportunity to learn from the labours and investments of other gardeners.

Submission to the Perth Hills Bushfire February 2011 Review

15th April, 2011

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Organisation Details (Where Applicable)

Is this submission presented on behalf of an organisation:	Yes
If yes, name of organisation:	Bushfire Safety Consulting Pty Ltd
Position in organisation:	Joint Directors

Submission Context

Bushfire Safety Consulting Pty Ltd provides professional bushfire safety advise, planning, training and research to government, business, schools and individual residents. We are very active within the City of Armadale. Projects completed in the local area include Bushfire Risk Management Strategies for three schools, numerous Bushfire Attack Level (BAL) assessments for building companies, Bushfire Survival Plans for residents, Bushfire Evacuation Plans for businesses and Fire Management Plans for Developers. For more details see

Response to Terms of Reference

1. **The impact of land use, environmental and building laws, practices and policies in the affected areas, affecting bushfire prevention, mitigation and response and what, if any, changes may be required.**

Bushfire risk needs to be given much greater recognition in the planning process. Local government areas need to have comprehensive bushfire risk mapping data to guide appropriate development.

Most destroyed homes are unlikely to have been constructed to a Bushfire related standard. They probably did not exist when the homes were constructed. However an Australian bushfire standard (AS 3959-2009 Construction of Buildings in Bushfire Prone areas) now exists. Building to this standard assists (not guarantees) a building to resist ignition from bushfire attack mechanisms.

We recommend that the entire South West of Western Australia (or the entire state) is declared bushfire prone thereby triggering the requirement for every new dwelling and every home renovation / extension to be built to the Australian Standard (AS 3959-2009) Construction of Buildings in Bushfire Prone areas "standard". This will, as a minimum, make all homes more resistant to bushfire attack and ignition and would ultimately save homes and lives.

Maintenance of buildings is an integral part of building survival in bushfires so provisions need to be put in place to ensure building standards are maintained for the life of a home to maintain its bushfire resistance level.

In my assessments of Bushfire Attack Levels in new subdivisions, it is obvious that on occasions vegetation is not removed that is prescribed to be removed in the subdivision Fire Management Plan. The environmental regulations seem to override bushfire protection regulations which is evident in that building protection zones are not established as prescribed in Fire Management Plans. Fire Management Plans for rezoning proposals and subdivisions proposals clearly outline standards for Building Protection zones and hazard separation zones and who is responsible for establishing and maintaining these fuel reduced areas surrounding homes. There seems to be a lack of regulation and enforcement of the standards however

Neighbourhood Safer Places would provide an important last resort option for the public. Although there were no fatalities in the Roleystone fire thankfully, there were many stories of late evacuation which is a very dangerous response during a bushfire. The existing solution of nominating evacuation areas does not work for people as a last resort. The location of the Evacuation centre was changed half way through the Roleystone incident from a Roleystone location to one in Armadale.

2. **The actions that can and should be taken by landowners, residents and tenants in relation to bushfire risk management including undertaking vegetation clearance, operation of evaporative air-conditioners and storage and/or removal of hazardous inflammable material surrounding their dwellings and buildings. This should include consideration of associated enforcement regimes and penalties.**

Community Bushfire Safety is a shared responsibility for all levels of government and the community including individual residents. FESA have a range of programs and publications to assist and encourage people living in high risk communities to prepare for bushfire. I believe it is the success of those programs that requires some analysis. It is clear that there are many people in the community who do not adequately prepare their properties, they either do not understand their level of risk or choose not to prepare. The question then is, how can we improve bushfire safety messages to the community and see real behavioural change including increased levels of preparation. Vegetation clearance regulations may also hinder people from clearing trees in building protection zones for fire protection purposes.

In post bushfire briefings and my own experience working for clients in Roleystone, it is obvious very few residents actually establish and maintain building protection zones around their homes. Many homes would infact be in the predicted flame zone of a fire as previously discussed. Residents either do not understand their level of risk or if they do they chose not to prepare adequately. I believe there must be more interaction between bushfire community education professionals and FESA needs to substantially increase education and bushfire safety empowering programs. As a community we should not be surprised that we have these types of fires, My understanding is that three out of the states worst 4 bushfires in terms of property loss have actually occurred in the last 5 years. Dwellingup 2007 is the states 4th worst bushfire, Toodyay 2009 is the third and Kelmscott/Roleystone 2011 is the second worst. All come in well below the Dwellingup 1961 bushfire. When the climatic factors combine with the end of a long hot dry summer, the community should expect (and prepare) for large uncontrollable bushfires.

Failing peoples' lack of understanding and action to adequately prepare, there must be a significant increase in enforcement of important regulations such as the local government annual firebreak notice and hazard reduction works (including Fuel reduction burns) on private land.

3. **The adequacy and effectiveness of information and communication campaigns and mechanisms, including systems for alerting residents in relation to the fire or potential fires.**

I have heard anecdotally that many destroyed homes did not have defendable spaces around them. This indicates that FESA education programs are having limited success and local government regulation of the firebreak notice and enforcement of hazard reduction burns on private land is not occurring regularly enough.

The focus on FESA public education programs to evacuate buildings does not empower people to understand that, for low risk bushfire scenarios and with adequately prepared homes and surrounds, buildings can be successfully defended by fit, active people. In fact there is research from several post bushfire investigations that indicates that the chances of building survival is increased between 3 -5 times when properties are actively defended. I think this message has not been well communicated to the public and as a consequence many homes are destroyed that could have been successfully and safely actively defended. Some homes were destroyed some distance back from the fire front / bushfire fuels, demonstrating ember attack was significant in their ignition. Homes that only come under ember attack can generally be easily and safely defended. We are all concerned to prevent fatalities through bushfire but this should not mean that individuals and government agencies should not attempt to take some responsibility for the protection of property from bushfire. This is an extremely important issue given the considerable economic and social costs of property loss through bushfire

The land use planning and building control systems operate prospectively and are limited in how they can be applied to existing homes in bushfire risk areas. The question of property defendability and construction standards is difficult for residents to determine. Following the Victorian Black Saturday Bushfires, the Country Fire Authority (CFA) and the Building Commission of Victoria (BCV) produced a document (titled “A guide to retrofit your home for better protection from a bushfire”) for the public to guide them on how to retrofit existing homes to both assessed Bushfire Attack Levels (BALs) and to retrofit for generic ember protection. The document recommends that the BAL assessment is done by a suitably qualified person, however once completed, residents can improve their homes’ resistance to bushfire attack mechanisms.

The current advice that FESA provide in their “Prepare Act Survive” document suggests a 20 metre circle and screening of gaps on the home may be sufficient. This advice does not recognise that some homes (even with a 20 metre safety zone) in reality will still be within the predicted flame zone (BAL-FZ) or BAL-40 (depending on slope) of a bushfire and simply screening gaps and clearing for 20 metres is insufficient. If homes are adjoining forest class vegetation on flat ground the safety (low fuel) zone needs to actually be 42 metres surrounding the home to be impacted on only by embers. It is not specific enough advise for residents.

FESA and the Western Australian Building Commission should produce a a document similar to the one produced by CFA and BCV for Western Australian residents.

My experience is that there is a complete lack of understanding in the community as to what Fire Danger forecast area people reside in. There is a range of forecast areas referred to in FESA media releases including Perth Hills, Metro Hills and Lower West Inland forecast areas. The FESA website does not have maps showing people which fire forecast area they reside in. This is crucial because the Fire forecast indicates to the public the potential and predicted fire behaviour on any particular day and allows people to prepare accordingly.

Perth Hills Bushfire February 2011 Review

Mr Mick Keelty APM

Dear Mr Keelty

I live in the Perth hills suburb of Brigadoon, our community have been evacuated from large bushfires for the past two years, in January 2010 and February 2011. Although both these fires burnt out large areas, lucky wind changes stopped the fires from getting into the dangerous heavily vegetated areas of Brigadoon. Personally, while our property was extensively burnt our house was untouched. From my experiences with these two fires and my involvement as mentioned in more detail below, it has become clear to me that the Government authorities including FESA, Local Government and WAPC, that are responsible for fire risk prevention and mitigation are too politically influenced and motivated to make the correct decisions that will reduce fire risks to the public and fire fighters.

The reason I am putting in a submission is – since 4 April 2007 until currently, I have been closely involved in the approval process of housing developments in Brigadoon. The decisions regarding bushfire prevention and mitigation measures by these Government departments have left me and others that were also closely involved, **extremely shocked**. Common sense would suggest that the best means of implementing fire prevention and mitigation would be at the planning and decision making time, but through this process we have seen that these measures are disregarded and reduced if they will interfere with the developers desire to get the maximum amount of lot numbers, increasing profit margins.

The following points are examples of these Government department's lack of desire to protect and enforce existing preventative measures designed for public and fire fighter safety. I have used the suburb of Brigadoon, both existing and recently approved as an example, because possibly never before has a housing development approval process been closely examined as this hills suburb has been, and this example is carried out on many occasions throughout Perth hills suburbs.

Fire prevention and mitigation guidelines which are referred to, are from the WAPC/FESA Planning for bushfire protection document, and are enforced through WAPC Policy No. DC 3.7.

The most recent housing subdivision in Brigadoon by developers Peet Ltd was approved by the City of Swan on 6 Feb 2008 and final approval by the WAPC on 9 March 2010 for 214 houses. Both departments took advice and direction from FESA.

Description of the Site. The site and surrounding area are rated Extreme Fire Danger. (Described and documented as "maximum density for our climate" by a world renowned Forestry Professor). This area is heavily forested, steep undulating ground with over 75% of the boundary having over a 200 metre high extremely steep escarpment face (well over two times higher than the Kings Park escarpment) and then rising another approx 100 metres to the centre of the site. The site has regular extreme wind speeds. Site access is dangerous. Water to the area relies on overhead electricity for pumps.

Despite the community raising our concerns that a housing development was too dangerous for this area and the increased amount of lot numbers demanded by the developers made it impossible to meet the current fire prevention measures mentioned in the Planning for Bushfire Prevention document - such as, had no public perimeter road and no minimum 100m Hazard Separation Zone. The development was approved by Local Government and FESA in Feb 2008. In July 2008, the Commonwealth Department of Environment declared the proposal "a controlled action" because of the impact on endangered species and as such required assessment and approval by the Minister Peter Garrett. Minister Garrett then required the developers to provide mitigation for the loss of habitat caused by the placement of the houses, roads and infrastructure. In desperation to gain approval the

developers Peet Ltd provided a mitigation plan that required *1000 extra trees* to be planted on each lot (214,000 over all) and 100 ha of extra vegetation to be planted onto the extremely steep escarpment face directly below the houses - as well as other increased vegetation to the existing minor degraded areas. (The majority of lots are 1.6ha). The vegetation must be suitable for the Carnaby's Cockatoo (That is native species such as marri which is highly flammable). Also because of the recognition of the impact on endangered species, FESA and the City of Swan now allowed the original Fire Management Plan presented to council to be severely reduced in standards. Both Minister Garrett and the WAPC then approved the development. The authority's decision to approve the massive increase of vegetation is in complete contradiction to the requirements of vegetation reduction to lower the fire risks from extreme to medium that a housing development requires.

This development also had many provisions and a rezoning that should have required a lower amount of lot numbers but the COS and WAPC largely increased lot numbers. If a lower amount of lot numbers had been applied to this development it would have been able to meet and exceed fire risk mitigation. Instead the authorities made the developers profits more important than the public and fire fighters safety.

The following points also show how the authorities show little importance on fire risk mitigation in their strong desire to maximise developer's profits.

The City of Swan Mayor lied and deceived council voting on the proposal stating that "the site was predominantly cleared". A councillor later admitted in the media to being deceived.

The following are minimum requirements and statements that are not followed in the Planning for Bushfire Protection document, and repeated in acceptable solutions in the same document.

No public perimeter road – Quote "A public road must be provided between extreme hazards and adjacent subdivision". Because of the increased lot numbers this development only has a gravel fire break on private property. FESA argued it is an acceptable solution to have a fire break instead of a public road but in fact in acceptable solutions it again states "must have public perimeter road". In this particular development where the houses are being built at the top of a 200m high escarpment face a public road (20m wide easement with bitumen seal) would have allowed fire fighters to access a fire unrestricted before it approached the houses. FESA have allowed the road to be replaced with a gravel fire break on private property meaning access will be dangerous, slower and gates at each lot boundary. If ever a perimeter road was needed it would be in this occasion and yet FESA, COS and WAPC deleted it because the developer would not have been able to have the excessive lot numbers. FESA have removed the requirement of a public perimeter road from the 2010 version of the planning for bushfire prevention document.

Hazard Separation Zone – Quote "Hazard separation zones must be provided between extreme bush fire hazards and buildings to create a minimum separation distance of 100 metres". Again this is stated in acceptable solutions. Despite the boundaries of this development being rated extreme fire danger, at the top of a 200m escarpment face and being increased in vegetation, the authorities have allowed the HS Zone to be reduced to 60m, again to maximise lot numbers.

Quote "The more fuel that is available, the windier and drier the weather, and the greater the slope, the faster and hotter a bush fire will burn". – Despite this statement, FESA, COS and the WAPC approved the massive increase of vegetation on the escarpment face directly below the houses as well as on each lot.

Quote "It should be noted that the building protection zones can adversely affect the retention of native vegetation. Where this loss is not acceptable or causes conflict with either landscape or environmental objectives, reducing lot yield may be necessary in order to minimise the removal and modification of remnant vegetation". Despite the Minister for the environment declaring the site critical habitat for endangered species, the COS, FESA and WAPC allowed a large increase in lot numbers, increasing fire risks when a decrease should have been recommended.

Quote “Limiting the fuel quantity and fuel proximity around communities and buildings”. In this development the authorities increased fuel quantities and proximity.

FESA explained that they allowed some fire risk measures to be reduced as the houses are to be built to Australian standard 3959. This standard was designed to help a building and its occupants withstand a fire attack. By reducing other standards can lead to higher risks to people and fire fighters outside the building. By reducing other fire risk measures, higher radiant heat could also ignite fixtures such as curtains ect. AS 3959 is also easily compromised, for example an open garage door. AS 3959 was designed to assist in fire risk prevention, not allow other measures to be reduced as FESA are doing.

Emergency access and escape route in the event of fire. – Original development of Brigadoon.
The first stage of Brigadoon was first approved in 1984/1985. Because of this, the early development which had only one access/exit road which does not comply with current guidelines introduced in 2001 (WAPC/FESA Planning for bushfire prevention). Since these guidelines were published the community as well as previous FESA staff continually advised the City of Swan and WAPC that further subdivision should not be supported until a second access is provided. The COS and the WAPC continued to ignore this advice and approve more housing developments through further subdivision. Through freedom of information we received paperwork that showed how officers from within the COS had advised that proposed subdivisions did not meet current standards and yet they were also ignored and the further developments approved. (We have all the paperwork to confirm the warnings from FESA and City staff). This second access road was finally commenced in late 2008 after I went to the media who printed a front page story about the issue on 6 Aug 2008.

FESA arrogance - FESA have made many alarming statements regarding the Brigadoon development which have been proven to be wrong. FESA spokesperson Allan Daw stated to the media that he “doubted a fire-fighter would ever need to attend, any fire would be contained by helitac”. “We don’t have the humidity conditions to have fires at night” Since he made those statements Brigadoon has been evacuated for two years with fires burning out of control throughout the night and unable to be stoped with massive ground and helitac support. Allan Daw also described the site as worthless mountain goat country. The same site that a world leading forestry professor described as maximum density for our climate. It is no coincidence that with the current FESA management, Perth is experiencing its worst fire events.

In closing – Through our experience being involved in this process it is blatantly clear that developers get what they want, and they are simply profit driven. If the authorities continue to allow development to be based on maximising profits and not enforcing proper fire risk and mitigation measures then it will only be a matter of time before a massive fire disaster happens in the Perth hills. There is a simple solution to ease the future threat to the public and fire fighters from bushfires, and that is stop allowing developers to put houses in areas that are rated extreme fire danger. There is a massive amount of semi cleared land that is more suitable to build on.

Brad Brown

Perth Hills Bushfire February 2011 Review

Submission from Suncorp Insurance

4/15/2011

April 2011

Contents

Introduction

The following submission from Suncorp represents a Group view in response to the independent review of bushfire risk management in the Perth Hills, Western Australia, area in February 2011.

The Suncorp Group includes a range of financial services providers including:

General Insurance - AAMI, Apia, GIO, Shannons, Just Car Insurance, Suncorp Direct, Vero Travel and two internet insurers, Bingle and InsureMyRide

Commercial Insurance – GIO, Vero and VeroProfin

Banking - Suncorp Bank

Suncorp Life - Suncorp Investment Management Limited (SIML), Asteron (Australia and New Zealand), Standard Pacific, Guardian Financial Planning, Guardian Trust (New Zealand) and Cameron Walshe.

The following paper offers information for consideration in regards to community preparation for, and recovery from, major weather events, including bushfires and other natural disasters.

On the weekend of February 5 and 6, 71 homes were destroyed and a further 39 homes and other structures damaged by bushfire in the Perth Hills region. The Suncorp Group received 46 home and contents insurance claims as a result of the bushfire, with the majority of impacted policyholders insured under the GIO brand. Of these, six homes were completely destroyed. The average claims value was around $180k. Most claimants were underinsured for the degree of damage sustained and benefitted from GIO's Safety Net feature, which provides a minimum extra 25% coverage on top of the sum insured.

In preparing this submission, Suncorp drew on our experience of assisting customers after major weather events and disasters across Australia, including the Victorian Black Saturday bushfires of 2009, and the more recent flooding in Queensland, Victoria and New South Wales. This submission contains recommendations to improve community preparation for and resilience in response to major events, including the role of government in risk mitigation. Additionally this paper recommends a community-focused response to under and non-insurance in Australia, led by government.

All questions or comments in the first instance should be directed to:

Annabelle Butler
Executive Manager Public Policy and Stakeholder Management
Suncorp Insurance
Phone:
Email:

Executive Summary

The bushfires in Perth Hills over the weekend of February 5 and 6 destroyed 71 homes, with a further 39 homes and other structures damaged. The Suncorp Group received 46 claims for damage from this event, with the majority of affected policyholders insured under the GIO brand. Of these claims, six homes were completely destroyed and the average claims value was some $180k. Most claimants were underinsured for the degree of damage sustained and benefitted from GIO's Safety Net feature which allows for a minimum extra 25% cover if the cost of rebuilding exceeds the sum insured.

Suncorp welcomes the opportunity to contribute to the independent review of aspects of bushfire management in the Perth Hills area, particularly in respect of community mitigation of risk and preparation for bushfire.

Suncorp has extensive experience in handling claims and assisting with the recovery process following major weather events and natural disasters in Australia and New Zealand, including the Black Saturday tragedy in Victoria in 2009 and, most recently, extreme weather events in Queensland, New South Wales and Victoria.

In recent years, the cost and impact of major weather events and natural disasters on Australian communities has increased. As the Australian population continues to spread beyond city centres, and those cities become more densely populated, the human and financial cost of weather events will continue to rise. Most recently this was demonstrated by the Brisbane floods in January 2011.

One of the key issues that has been identified through the review process following on from the Queensland floods, is risk mitigation. As this paper will explore, with the increasing ferocity of extreme weather events, risk mitigation by government, both local and federal, will play a more and more crucial role in helping to limit the impact that these events will have on local communities. Risk mitigation includes understanding the risks facing a community and planning and managing appropriately, whether it be land management, water management or building standards. If as Australians, we continue to ignore this method of risk reduction, there will be continual damage to local communities, large scale clean-up programs following on from events and inevitably rising insurance premiums.

Sadly the inevitable outcome of rising premiums is that affordability will continue to be an issue. The resulting non and under insurance will cause significant demands on State and Federal resources. In this submission, Suncorp reviews the issue risk mitigation and under and non insurance in Australia and recommends a community focused response led by governments (both local and Federal).

Suncorp also describes pilot activities undertaken with regional communities and NGOs to build resilience and develop collaborative approaches to both prepare and recover from major weather events. A joint approach between all levels of government, emergency services, insurers and the wider community is proposed to building community resilience in the Perth Hills area and throughout Western Australia, drawing from the recent bushfire experience and other events around the country.

By proposing a collaborative approach to preparation and resilience, Suncorp is suggesting that the responsibility for ensuring the safety of communities in the face of major events is a shared one. While insurers have the responsibility to accurately price risk and provide appropriate insurance products to consumers, consumers must take responsibility for maintaining their properties in light of potential risks, and equally for maintaining adequate levels of insurance.

Alongside this personal and corporate responsibility, local, State and Federal governments must assume responsibility for planning laws and regulations, infrastructure and emergency response.

It is suggested that this collaborative approach will provide the best outcomes for all Australian communities.

Key Recommendations

1. To ensure that full data is made available to allow insurers to accurately price risk for major events (fires, floods, cyclones etc.). This includes local risk mitigation strategies and flood data.

2. Local risk mitigation strategies are examined to ensure that they are appropriate for the communities that they are designed to protect. This includes appropriate forestry and land management, flood management, building codes and planning laws.

3. The WA Government work with the insurance industry to help improve the level of understanding of the value of insurance and the role it plays in sound financial planning for households and businesses. This includes the concept of underinsurance and the potential consequences if there is a total loss.

4. The WA Government consider establishing a permanent disaster management taskforce made up of key stakeholders, including ministries, insurers, emergency services and other relevant industry bodies. This taskforce should be convened when a major event occurs to allow co-ordination of relief efforts by the different parties.

5. Ensure rebuilding efforts are co-ordinated at a community level, by facilitating interaction within the community and by bringing in appropriate advisors. For instance, the Victorian Government provided funding to Green Cross Australia to develop a web portal providing information to communities affected by the Black Saturday bushfires.

6. Call on the expertise of insurers which have experience in helping communities rebuild after an event. Allowing insurers a greater role initially in the event management/co-ordination can help reduce the long term impacts of an event on the local community.

Section 1: Risk Mitigation and the link to pricing risk

Insurance, Risk-assessment and Re-insurance

Insurance companies use actuarial analysis to predict what percentage of insured people or businesses will actually suffer a loss and lodge a claim. This analysis helps determine the amount of the premium. Other factors such as location of the risk, propensity to natural disasters of that risk (e.g. fire, flood, cyclone etc.), value of the property being insured, in building the construction of that risk and previous claims are also taken into consideration. Naturally, the lower the risk, the lower the insurance premium.

When individuals or companies purchase insurance policies, the money from the premium is combined into what is called the insurance "pool".

An insurer is required to have enough capital/reinsurance in the "pool" to be able to pay out potential insurance claims. In Australia, the capital and reinsurance requirements of general insurers are governed by the Australian Prudential Regulation Authority (APRA).

Reinsurance is insurance that is purchased by an insurance company (insurer) from another insurance company (reinsurer) as a means of risk management - it transfers some of the risk from the insurer to the reinsurer.

The reinsurer and the insurer enter into a reinsurance agreement which details the conditions upon which the reinsurer would pay the insurer's losses (in terms of excess of loss or proportional to loss). The reinsurer is paid a reinsurance premium by the insurer..

For example:

- Assume an insurer sells one thousand policies, each with a $1 million policy limit. Theoretically, the insurer could lose $1 million on each policy – totalling up to $1 billion, and;
- The insurer passes some risk to a reinsurance company (reinsurer) to minimize the insurer's risk.

Therefore, in order for insurers to offer insurance to customers, and to acquire reinsurance, it is necessary for both the insurer and the reinsurer to be able to;

- assess the frequency and severity of a particular risk event based on historical data (statistics) and estimations of future events (such as information from the Australian Bureau of Meteorology),
- understand the effect of risk mitigation strategies (such as land clearance for bushfire risk or flood mitigation strategies, e.g. dams and flood levies for flood),
- assess the level to which risks are ameliorated by local planning laws and other regulatory requirements for buildings (e.g. Building Codes) and other insurable interests, and
- appropriately price the risk

Without these things a general insurer's ability to obtain prudentially sound reinsurers willing and able to accept a transfer of part of the risk at an appropriate cost, in accordance with APRA prudential regulation and approved reinsurance management strategy, is threatened.

Pricing Risk and its link to Risk Mitigation

For an insurer to be able to price a risk appropriately, the general insurer and the reinsurer need access to information that enables them to:

- Accurately define the insurance events to which the policy responds
- Calculate the probability of the insurance event occurring
- Calculate the potential liability for compensation if the event occurs and
- Assess the extent to which the risk can be discounted due to any mitigating factors for example dam management

In relation to flood, storm surge and cyclone damage information used includes local authority flood maps, reports on water management and flood mitigation strategies for the local area, such as dams or levees and historical data on weather and water patterns. Therefore fair pricing absolutely depends on the information that is available being accurate, transparent and independently verifiable.

In the particular case of the Perth Bushfires, it needs to be noted that Suncorp prices each risk individually (including building) rather than on a postcode level. That means in a street with a watercourse, the insurance premium for a house on a hill would be priced lower than a house near a creek in the same street, or in terms of bushfire risk, each house would be priced depending on its location and historical propensity to bushfire.

The availability and accuracy of this information means that Suncorp's reinsurers are also willing to take on part of that risk.

Therefore the management of natural hazard risk such as fire is the collective responsibility of governments, businesses, communities and individuals. This event clearly demonstrated the effectiveness of private insurers in protecting customers from hardship and financial stress but also highlights that State and local governments need to supplement insurance with strategies and programs that improve disaster resilience and reduce the risk of wide-scale damage on property or potentially lives – risk mitigation.

Section 2: Non-insurance and under-insurance

It is in the interests of all Australians that affordable, effective insurance is available to protect their properties and belongings. Additionally, the community must consider the wide ranging impacts when individuals choose to under insure or not take out insurance, and question where responsibility lies if underinsured / uninsured homes and businesses are destroyed or significantly damaged during a major weather event.

Extensive research has been conducted in the last 10 years into non-insurance and under insurance[1]. While affordability is the principal reason given for under / non insurance by low incomes earners, in the wider community other factors also influence the decision to buy or not buy insurance[2].

These are reported to include

- lack of understanding of insurance products (for example the concept of excesses and risk sharing),
- confusion about cover,
- overconfidence about the risk of loss,
- and undervaluation of assets – often due to customers failing to update their asset profile on renewal, following on from large purchases, such as televisions or furniture or renovations to properties[3].

After the Canberra bushfires of 2003 and the Victorian Black Saturday bushfires in 2009, a significant proportion of those affected were either underinsured or had no insurance at all. Not only can this leave victims in dire financial circumstances, it also has the potential to negatively impact the entire community as demands are placed on already stretched resources, which are also expected to fund the rebuilding of infrastructure and services.

Australians have rallied to assist victims of disasters in the past, but it is unrealistic to expect community donations and charitable groups to adequately fill the gap left by under / non-insurance as the number and severity of major weather events increases.

As outlined above, insurance companies are experienced in identifying and pricing risk, and in providing adequate and appropriate cover. By improving community understanding of insurance and encouraging individuals to accept personal responsibility by taking out an appropriate level of cover, the risk is spread across a larger pool of risks, helping to contain costs. The expectation that governments will always have funds to bail out victims creates the risk of fewer people taking out insurance, leaving a small pool to share and fund the risk. This, in turn, risks increasing the cost to

[1] AAMI, Apia, the Brotherhood of St Laurence, 2006, *Access to General Insurance for People on Low Incomes*; Insurance Australia Group, 2001, *Home and Motor Vehicle Insurance: A Survey of Australian Households*
[2] ANZ, 2004, *A Report on Financial Exclusion in Australia in 2004*
[3] Insurance Council of Australia, 2008, *The Non-Insured: Who, Why and Trends in 2008*

individuals and exacerbating affordability issues. Additionally, those who take out insurance can feel aggrieved that those who are do not take out cover, are nevertheless looked after.

The general insurance industry has responded to concerns about affordability and underinsurance in a number of ways. For instance, the Suncorp Group includes a number of brands which offer a range of products and coverage options, including:

Affordability

- discounts for those aged over 55 (Apia),
- pay by the month premiums,
- Low cost no frills insurance products such as Renters insurance (AAMI Contents) and Bingle (comprehensive car insurance),
- Under 25s driving program (Skilled Drivers) to help young people reduce their risk – which attracts a 10% discount from AAMI if completed,
- variable excesses (which are designed to help the insured manage the cost of their policy by risk sharing, and
- online and multi-policy discounts.

Underinsurance

- Complete replacement cover (CRC) – which prevents underinsurance for building, under the AAMI brand as there is no limit from a consumer perspective on the sum insured;
- 25% safety nets for building under the GIO and Suncorp brands;
- Automatic Index linked increases to sum insureds on an annual basis for renewals;
- On line calculators which are designed to help customers accurately price their assets; and
- Underwriting questions which mimic the on line calculators to help customers ascertain the right level of cover when purchasing insurance.

Suncorp continues to work with Consumer Advocates and Agencies to find ways to improve access to insurance for all Australians.

Suncorp's Experience with the Recent Perth Bushfires – Under insurance

Across the Suncorp Brands (other than AAMI – building as the policy is a Complete Replacement Policy) there was clear underinsurance for both building and contents. This result mimics the results seen in Victoria after the Black Saturday fires.

The following tables show the under insurance for both Building and Contents experienced by the Suncorp Group after the Perth Bushfires, - event date 06/02/2011.

Company	Partial / Total	BLD S/I	Safety Net	Building S/I + Saftey Net	BLD Loss	Under Insured Amount - Building	Under Insured % - Building
GIO	Total	$525,000.00	$131,250.00	$656,250.00	$753,771.66	$97,521.66	13%
GIO	Total	$509,000.00	$127,250.00	$636,250.00	$727,580.83	$91,330.83	13%
GIO	Total	$321,000.00	$80,250.00	$401,250.00	$595,313.42	$194,063.42	33%
GIO	Total	$308,000.00	$77,000.00	$385,000.00	$457,036.03	$72,036.03	16%
AAMI	Total	CRC	N/A	N/A	$587,321.71	$0.00	0%
APIA	Total	$150,000.00	N/A	$150,000.00	$557,668.12	$407,668.12	73%
AAMI	Total	CRC	N/A	N/A	$365,303.61	$0.00	0%
GIO	Total	$475,000.00	$118,750.00	$593,750.00	$605,271.00	$11,521.00	2%
GIO	Total	$361,000.00	$90,250.00	451,250.00	$495,502.20	$44,252.20	9%
				Totals...	$5,144,768.58	$918,393.26	18%

Table 1 – Underinsurance – Building

Company	Partial / Total	CTN S/I	CTN Loss	Under Insured Amount - Contents	Under Insured % - Contents
GIO	Total	$62,900	$96,062.00	$33,162.00	35%
GIO	Total	$130,000.00	$198,885.00	$68,885.00	35%
GIO	Total	$117,000.00	$134,482.00	$17,482.00	13%
GIO	Total	$173,000.00	$206,399.00	$33,399.00	16%
AAMI	Total	$60,225.00	$111,371.00	$51,146.00	46%
APIA	Total	$25,000.00	$100,309.00	$75,309.00	75%
AAMI	Total	$50,500.00	$104,170.00	$53,670.00	52%
GIO	Total	$119,000.00	$134,440.00	$15,440.00	11%
GIO	Total	$86,000.00	$118,175.00	$32,175.00	27%
			$1,204,293.00	$380,668.00	32%

Table 2 – Underinsurance – contents

To date indications are that 5 of the claims for building are cash settlements, with potentially 2 rebuilds. It is likely the two remaining claims will also be cash settled, if the trend in Perth is similar to that in Victoria after Black Saturday.

Table 1 – shows how valuable both the CRC and the 25% safety net (under GIO) are in terms of counter acting under insurance.

All assessments for the claims were completed within eight days.

Suncorp recommends that the WA Government engage more closely with the insurance industry – both through the Insurance Council of Australia (ICA) and directly with insurers - to provide clear information to the community about insurance in general and the part it plays in sound financial planning. Additionally Western Australia can take advantage of federal government initiatives such as www.moneysmart.com.au to help improve financial literacy in the community.

Section 3: Building community disaster resilience

In October 2010, Attorney-General Robert McClelland announced a joint implementation plan for disaster resilience initiatives in Western Australia during 2010-11. The Commonwealth Government committed to contributing more than $3million to three key projects identified by WA. These are

- the WA Natural Disaster Risk Assessment - to be completed by the end of 2011,
- the Natural Disaster Resilience Program, aimed at achieving safer, sustainable communities, more resilient to the effects of natural disasters, and
- projects of State Significance, to address key natural disaster risks and to trial or enhance emergency management capabilities.[4]

The Natural Disaster Resilience Program provides access to funds which can be deployed within communities to develop programs to identify local risks and prepare for them, as well as to plan for recovery. This program complements work that the Suncorp Group has already undertaken in at-risk communities in other parts of Australia.

In late 2010, Suncorp Personal Insurance partnered with Green Cross Australia (www.greencrossaustralia.org) to conduct the Storm Season Community Forums pilot program, a series of free community forums held across North Queensland. The forums were designed to test the concept of raising community awareness of severe weather trends, storm preparedness and green response across regional Queensland through local engagement and third party presentations. The forums also sought feedback from regional communities on additional information they would find useful, to help improve future forums if the pilot was to be adopted.

The presentations were led by Green Cross consultant Leanne McKnoulty and included information from organisations including CSIRO, Bovis Lend Lease, Building Codes Queensland, Emergency Management Queensland and Ergon Energy. The information was provided in a variety of formats including filmed interviews and presentations, and in written form. Local community service clubs, chambers of commerce and local government were encouraged to participate and attend, along with members of the wider community.

The pilot program visited eight Queensland communities identified as being at risk of storm and flood– Miles, Roma, Charleville, Goondiwindi, Mackay, Townsville, Innisfail and Ingham. Response to the program was overwhelmingly positive, with feedback from attendees requesting annual events and more detailed information about specific local action.

To build on the learnings from the Queensland pilot, GIO Personal Insurance is planning to hold a series of community forums across NSW and Victoria later this year to address risks including storm, flood and bushfire.

[4] Attorney General for Australia, 2010, *Commonwealth and Western Australia agree on disaster resilience partnership;* Natural Disaster Resilience Program http://www.ema.gov.au/

This community-centred approach is a relatively low cost way to engage at a local level and provide information which communities can use to prepare and plan before weather events occur. It is also a useful tool in identifying local concerns and developing solutions together.

By collaborating to provide practical information and concrete, affordable solutions, government, NGOs and corporations can give communities more control and more confidence in their ability to resist and recover from major weather events.

While government and insurers can assist in a community's recovery post event, it is equally important to inform communities beforehand that relatively simple action can improve resilience and substantially mitigate damage. For instance, CSIRO researchers found that relatively small modifications enabled buildings to better withstand Cyclone Larry, and homes that had been rebuilt to new standards after Larry suffered less damage during Cyclone Yasi.

Suncorp recommends that a community forum program be designed and implemented across Western Australia on an annual basis. The circumstances of each community would dictate the topics covered (for example flood, storm, or bushfire) and the type of information provided.

Green Cross Australia has been contacted by a Kelmscott Hills resident whose home was destroyed in the February bushfire. She has asked Green Cross to undertake community briefings in the area to provide information about preparation for bushfires and *Build It Back Green*. Green Cross Australia is keen to again partner with Suncorp and local organisations as it did in Queensland.

Section 4: Community response to natural disaster

Suncorp recommends that WA draws on the learning and experience gained from similar events, such as the Victorian bushfires of 2009. In particular:

1. Establish a permanent disaster management taskforce made up of key stakeholders, including ministries, insurers, emergency services and other relevant industry bodies. This taskforce should be convened when a major event occurs to allow co-ordination of relief efforts by the different parties. Additionally, this taskforce can be the major conduit of communication regarding recovery efforts, management of sites, OH&S issues and access issues.

2. Ensure rebuilding efforts are co-ordinated at a community level, by facilitating interaction within the community and by bringing in appropriate advisors. For instance, the Victorian Government provided funding to Green Cross Australia to develop a web portal providing information to communities affected by the Black Saturday bushfires. The *Build It Back Green* bushfires guide provides information on rebuilding to improve resilience. The guide also provides advice on the lowest cost green rebuilding techniques, focusing on energy efficiency, water savings and indoor air quality [http://builditbackgreen.org/bushfires.aspx].

3. Call on the expertise of insurers which have experience in helping communities rebuild after an event. Allowing insurers a greater role initially in the event management/co-ordination can help reduce the long term impacts of an event on the local community.

Conclusion

Clearly, public policy that provides "disaster proofing" of communities and community assets is a far more productive investment than a singular focus on issues that only serve to replace losses. Basic "disaster-proofing" measures include:

- the careful management of risk in bushfire prone areas,
- the construction of levies and other flood mitigation infrastructure,
- encouraging settlement in areas that are not vulnerable to flood or bushfire, and
- developing building codes intended to withstand level five cyclones, earthquakes and bushfires.

Public policy measures like these are not only better for the community, but they also improve the insurance options, reduce the cost of insurance premiums and help speed recovery

As outlined above, risk mitigation is directly linked to the pricing of a risk. If risk mitigation is seen to be inadequate, this increases the likelihood of loss arising from an event (e.g. flood or fire) which means insurers need to appropriately price and provision for the risk.

Hence from an insurer's perspective, it is vital that there are effective risk mitigation strategies in place by local councils and governments if consumer insurance premiums are to be kept affordable. This can be in many forms, from planning laws, construction codes, water management and land management (in relation to bushfire).

Ultimately, the performance of insurance providers in providing low cost premiums and meeting claims obligations will always be primarily dependent on successful risk mitigation by governments. Successful risk mitigation will minimise the insurance burden during periods of unavoidable natural disasters and manifests itself in lower insurance premiums and faster claims processing and resolution. This in turn leads to lower rates of under and non insurance due to affordability issues.

Appendix: References

ANZ, 2004, *A Report on Financial Exclusion in Australia in 2004*

Attorney General for Australia, 2010, *Commonwealth and Western Australia agree on disaster resilience partnership,* http://www.attorneygeneral.gov.au/www/ministers/mcclelland.nsf/Page/MediaReleases_2010_FourthQuarter_7October2010-CommonwealthandWesternAustraliaagreeondisasterresiliencepartnership

AAMI, Apia, the Brotherhood of St Laurence, 2006, *Access to General Insurance for People on Low Incomes*

Green Cross Australia www.greencrossaustralia.org

Insurance Australia Group, 2001, *Home and Motor Vehicle Insurance: A Survey of Australian Households*

Insurance Council of Australia, 2008, *The Non-Insured: Who, Why and Trends in 2008*

Natural Disaster Resilience Program http://www.ema.gov.au/

www.moneysmart.com.au

From:
To:
Subject: Submission
Date: Friday, 15 April 2011 1:47:40 PM
Importance: High

Dear Sir,

My husband and I were lucky enough to escape fire damage due to the wind direction being in our favour. Our only inconvenience was evacuation for 3 days. As the crow flies we were only 300 yards away from homes which were burnt to the ground.

My concern was that from about 13:00 we were not only without power but more importantly, without water, so were totally unable to defend ourselves or even dampen our house and surrounding area prior to our departure from our home. Imagine my horror, then, on attending a meeting at the Bedfordale Fire Service to hear that not only were we without water but that the Fires Service was also unable to access water from the hydrants as the same pump which pumps up scheme water to us also pumps it up into the hydrants.

I know that to a certain extent one has to make provisions for oneself in a fire prone area and not expect everyone else to look after you. I understand and accept that, and that a rainwater tank could be an advantage in these circumstances, but in order to lessen our fire risk, we removed all the gutters from our home as the property backing onto us is bounded by pine trees and there is no “gutter guard” or similar product available which will keep pine needles from rapidly and continuously filling them. Therefore, if we were to obtain a tank, we would only be able to fill it manually with scheme water.

Two to three years ago or more, there were surveyors surveying the area bounding our property who were from the Water Corporation. They marked several trees and we were given the impression that there was some sort of pipeline going to be constructed to alleviate the problem of the water from the corporation tank being taken to the bottom of the hills and then having to be pumped back up to us. Nothing more has happened and I would urge the Water Corporation to continue with this construction.

Although this is no longer a problem, it took us over two years of correspondence and telephone calls with FESA and the rangers from Armadale Council to get the owner of the property on our back boundary to remove a huge amount of tree debris and fire hazardous material. It was, indeed fortuitous, that the fire did not come through this area but that it did not come though before the area was finally cleared.

Your faithfully

Alan & Victoria Cousins,

Submission to the
Perth Hills Bushfire February 2011 Review

Contact Details

Name:	Bruce Waddell
Address:	
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Organisation Details (Where Applicable)

Is this submission presented on behalf of an organisation:	No
If yes, name of organisation:	
Position in organisation:	

Response to Terms of Reference

You must address at least one of the Terms of Reference.

1. **The adequacy of current preventative measures, specifically prescribed burning and other bushfire mitigation activities.**

   The failure of the WA Government & the City of Armadale to adequately control wild grass growth in their reserves & property appears to have been a significant factor in this incident.
   The total ban on vegetation burning in the City of Armadale on residential blocks was another serious contributory factor.
   The greenwaste collections are insufficient & inadequate to deal with the volume of summer leaf fall.
   #1-1 Introduction of environmentally sensitive control of understory vegetation is essential.

   #1-2 While management of the control/removal of weed grasses is the responsibility of the land owner. There are a variety of local organisations who may be interested in taking over that responsibility, for smaller blocks, as part of their community care/service commitments. Financial assistance from the owner body would be an incentive.

2. **The impact of land use, environmental and building laws, practices and policies in the affected areas, affecting bushfire prevention, mitigation and response and what, if any, changes may be required.**

   People choose to live in the hills for the environmental conditions that exist there. That includes being surrounded by trees & native shrubs & wildflowers.

As such, there are certain risks - such as bushfires. The ideal solution is not to clear fell the area to remove all sources of fuel, but rather to fireproof homes to enable them withstand the type of bushfires that can be anticipated in the local area in question. Regulations and building standards should be aimed at ensuring this. They should be crafted for the specific area taking into account the individual native vegetation.

#2-1 Bushfire prevention practices and policies to be applied in affected areas should be specific to that local area, and aimed at maintaining the natural character & environment of that area.

3. The actions that can and should be taken by landowners, residents and tenants in relation to bushfire risk management including undertaking vegetation clearance, operation of evaporative air-conditioners and storage and/or removal of hazardous inflammable material surrounding their dwellings and buildings. This should include consideration of associated enforcement regimes and penalties.

It is essential that this fire is viewed in the context of the local environment
It was a catastrophic grass fire on a day of elevated temperature & high easterly winds. Much of the velocity of the fire being accelerated through high dry grass on poorly maintained crown & local government land. Yet most of the critical comment has been about the closeness of vegetation (trees) to dwellings. There have even been calls for a 20 metre exclusion zone around houses. That is ludicrous!!
Look at the houses that survived. Look at the houses that were destroyed. It seems that building construction was more of a factor rather than the vegetation that surrounded it. This is borne out in the number of trees throughout the impact area that now remain standing albeit with dead leaves, from understorey heat, rather than the charcoal remains of a burnt out tree.

Evaporative air conditioners have been cited as a serious source of ember ingress into domestic dwellings when subjected to ember attack. I understand just under half of the homes destroyed had evap A/Cs installed.
There have been numerous recommendations & warnings to homeowners who have these type of A/C s installed. Screen and covers are now available for these units.

The question remains on how the fire got into the remaining houses.
The following need to be answered in order to develop a responsible & reliable management plan for homes in bushfire prone areas:-

- How many of the destroyed homes were metal roofed?
- How many were steel framed?
- How many had open eaves, passive or air spin roof space ventilation ?
- How many had plastic skylights? Did they fail?
- How many had window failure as the first point of entry?
- Other than air/con intakes, where was the most common point of fire entry?
- How many homes were lost where the resident chose to stay & fight?

In the north west of WA houses are now required to be built to cyclone proof standards. Bush fire prone areas need to be similarly prepared. Much of what is

required there would provide protection from high wind velocity ember attack. Use of fire retardant paints would be an additional benefit.
AS33959 aims to set the standard for new buildings. However, retrofitting of existing homes is prohibitively expensive. There is merit in government funding, in conjunction with significant insurance fund contributions, to assist homeowners with retro-fitting protective measures such as window shutters or screens, eave sealing, fireproof painting of flammable surfaces & other structural modifications to
#3-1 Provide assistance to homeowners to retro-fit fire protection modifications to existing dwellings.

Regulatory requirements need to be relevant and practical. A 20m exclusion zone around a house on a ½ acre block is unachievable and destroys the whole reason that people choose to live in the hills.
Recognition needs to be given to the differing fuel volatilities of different types of vegetation. Each area must be considered on its own merits. Conditions developed to address the hazards of Eastern states fire prone areas, with their highly volatile oil eucalypts trees, would be overkill here.
#3-2 Regulatory conditions must be seen to be reasonable & sensitive to environmental aspirations of the community in which they are applied.

#3-3 Communities must have input into the development of strategies to be applied in their own area.

4. The adequacy and effectiveness of information and communication campaigns and mechanisms, including systems for alerting residents in relation to the fire or potential fires.

The “Total Fire Ban” announcement, with associated advice as to restrictions on harvest vehicle movement & the use of welding & grinding equipment was delivered on ABC radio the night before. I did not see any other announcement &, in conversation with others in the community, no one heard an announcement on any of the other media outlets.
#4-1 It is essential that such notices are given a high priority on all TV/Radio outlets.

Subsequently, I have now heard radio announcements on other stations regarding fire warnings. I hope this is the first small step toward ensuring blanket awareness of a hazardous situation in any community. It is important to note that family outside the threatened area may hear the alert and they will seek to contact family within the area, this improving the depth of awareness.

Bushfire awareness plans emphasise the need to monitor the environment, on high risk days, for indicators like smoke. This particular fire, for long periods of time, did not deliver a smoke presence for much of Roleystone due to the velocity of wind holding the smoke below the scarp line.
#4-2 There is a definite need for an audible emergency alert alarm to be established in each community.

This could be in the form of “air raid” type sirens or verbal alerts emanating from circulating WAPol or FESA vehicles. However, siren alarms should be of reduced volume, non continuous and more numerous in number so as not to be counter-productive to those who are staying to protect property.
Anecdotally some residents say that they had less than ten minutes from warning to evacuation.
#4.3 Alerts must allow occupants the opportunity to stay & fight or evacuate with time to collect personal effects.

There was some ambiguity in the announcements being given regarding road closure and evacuation routes. Initially the Roleystone assembly point was centrally located in the town. Various road closures were announced, including for Canning Mills Road. When the evacuation assembly point was shifted from Roleystone to Armadale the route announced included Canning Mills Road.
If a road closure is only partial, that should be included in the announcement.
FESA updates were lagging well behind the ABC information. The ABC’s role in proving ongoing information is to be commended.
#4.4 Advices must contain more detailed and accurate information.

5. Improvements that can be made in relation to the coordination of activities across all levels of government, including with volunteer groups.

There is a need to provide more clarity in the conditions that apply when the various bans are applied. Until this incident, unless one actually heard the ABC announcement, the majority of the community would have been unaware that grinding and welding in the open were specifically prohibited. Yes the information is now clarified on the FESA web site, but it relies on the community being motivated to actually seek after it.
#5-1 Improve community education as to what the various bans mean.

Rather than relying solely on media announcement why not place prominent signboards in local shopping centres indication hazard status. They could be designed to be flexible enough to also deliver cyclone, flood, storm, spill & other hazard alerts as situations may require.
#5-2 Increase the number of signs indicating the presence of bans.

Chain of command would seem to be better resting in the hand of the incident FESA/VBFB controller. Police, in these situations should be there only for support & traffic management.
There needs to be concerted pressure placed on Western Power to implement, as a matter of urgency, the placing of power lines underground in bushfire prone areas. Shutting power off to protect fire fighters from the risk of live fallen power lines has wider ramifications in the maintenance of water supply & domestic fire fighting situations. It will also eliminate the risk of fires starting as a result of above ground wires clashing; branch contact arcing or pole collapse.
#5-3 Put power lines underground.

-oOo-

Submission to the
Perth Hills Bushfire February 2011 Review

Submissions should be submitted electronically (preferred) to:

or posted to:

Perth Hills Bushfire February 2011 Review
Locked Bag 10, Cloisters Square
PERTH WA 6850

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Contact Details

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Organisation Details (Where Applicable)

Is this submission presented on behalf of an organisation:	No
If yes, name of organisation:	
Position in organisation:	

Response to Terms of Reference

You must address at least one of the Terms of Reference.

1. The adequacy of current preventative measures, specifically prescribed burning and other bushfire mitigation activities.

I believe the adequacy of prescribed burning of bushland - every 3 to 7 years - is sufficient.

Increasing the frequency would be detrimental to the aims and functions of the bushland reserves [causing biodiversity reduction in species that regenerate from seed with a slow maturation rate ("Fire and Plants" Bond & van Wilgen, Chapman & Hall London, 1996)] as well as the aims of bushfire mitigation due to grass weed invasion ("Biological Invasions by Exotic Grasses, the Grass/Fire Cycle, and Global Change", Antonio & Vitousek, Annual Review of Ecology and Systematics23: 63-87, 1992).

2. The impact of land use, environmental and building laws, practices and policies in the affected areas, affecting bushfire prevention, mitigation and response and what, if any, changes may be required.

The WAPC DC policy 3.7 Fire Planning and associated FESA "Planning for Bushfire Protection (2001)" should be revised so that the objectives are unquestionably met.

There are instances in the City of Armadale in the 'Special residential' estates where high-density "rural" housing abuts forest and woodland bushland reserves with limited hazard separation and building protection zones. These estates could be considered suboptimal for 'Subdivision and Development Design' and 'Siting of Buildings' with respect to fire risk.

The policy should contain clearer, less interpretive limits on the distance from a fire hazard that a habitable building can be constructed, as the Bushfire Hazard Level assessment appears subjective.

With regard to building laws and standards, flammable-building products, such as pinewood structural members, should be disallowed. This should be irrespective of enclosure of spaces; as such things require maintenance and may not remain in place.

3. The actions that can and should be taken by landowners, residents and tenants in relation to bushfire risk management including undertaking vegetation clearance, operation of evaporative air-conditioners and storage and/or removal of hazardous inflammable material surrounding their dwellings and buildings. This should include consideration of associated enforcement regimes and penalties.

Landowners, residents and tenants should undertake clearance of the dead and dry vegetation.
- In all cases all grass should be kept short.
- All dead tree and shrub branches should be removed.
- Excess leaf littler should be removed (but not necessarily all leaf litter as this can be counter-productive where the absence of mulch encourages grass weed colonisation).
- Large shrubs should not be planted/maintained near houses.
- Trees near houses should have their lower branches (up to 2-3m high) removed.

These guidelines are as set out in CSIRO publication – "Landscape and Building Design for Bushfire Areas", Ramsay & Rudolph (2003).

Landowners, residents and tenants should undertake removal of hazardous inflammable material surrounding their dwellings and buildings.

The interpretation of these measures is subjective and consequently would be difficult to enforce (bar the grass maintenance action). Interpretation and enforcement would need to be done on a case-by-case basis, where complaints were received against excessively unkempt and untidy yards.

Landowners, residents and tenants should be strongly encouraged to join and form street/neighbourhood "Bushfire Ready Action Groups" (FESA approved) as fire-safety actions that should be undertaken by landowners, residents and tenants are a main focus of this program, including help/assistance/support where required to disadvantaged/elderly/disabled landowners, residents and tenants. Perhaps membership of the street/neighbourhood "Bushfire Ready Action Groups" (FESA approved) could be made mandatory.

The composition and manufacture standards of evaporative air-conditioners should be reviewed and legislation improving the standards should be brought forward as per the FESA position.

4. The adequacy and effectiveness of information and communication campaigns and mechanisms, including systems for alerting residents in relation to the fire or potential fires.

This last fire season (summer 2010/2011) I believe Roleystone/Karragullen residents received sufficient information relating to bushfires in the form of a FESA booklet and public meetings. The range of suburbs targeted in the last campaign should be broadened in the future.

As mentioned, landowners, residents and tenants should be strongly encouraged (possibly mandatory) to join/form street/neighbourhood "Bushfire Ready Action Groups" (FESA approved) as their aims include communication of bushfire information and communication and cooperation in the event of fire.

I am not sure if the alert systems could be improved further than the existing telephone contact and radio coverage.

5. Improvements that can be made in relation to the coordination of activities across all levels of government, including with volunteer groups.

Coordination of verge maintenance activities between the State and Local Governments should be addressed. The verge is owned by the Crown but vested in the Local Government and yet no financial assistance is given to the Local Government to assist in verge maintenance, a task that is not financially feasible for Local Government alone. In areas where natural verge vegetation has been disturbed grass weed invasion is a major fire risk to residents. Residents should be assisted to maintain the government land via printed educational material on how to maintain their verge (for example, weed reduction and competitive planting advice) and via distribution/access to free mulch and appropriate plants. The State Government should financially assist the Local Governments to set up such programmes.

Hon Alison Xamon MLC

BA, LLB, Cert IV HS

Member for the East Metropolitan Region

Dear Mr Keelty,

Please find enclosed my submission to the Perth Hills Bushfire Review.

As a Member for the East Metropolitan Region, I am privileged to represent the Perth Hills as part of my electorate.

On the day of the Roleystone-Kelmscott fires, homes in Brigadoon were also under threat from fire. These two fires took place not very long after a substantial fire through John Forrest National Park that threatened homes in Swan View and Hovea.

This recent summer has seen fire in nearly every suburb along the scarp. In every case our volunteer firefighters, along with Department of Environment and Conservation and Fire and Emergency Service staff have risen to the challenge and done the very best job they can and I thank them for all the lost family time and sleepless nights they have put in to keeping the people and places of my electorate safe.

I have been listening to the people of my electorate, so many of whom have been affected by fire this summer and they have been thinking hard about many of the issues raised for discussion in this inquiry. While I have encouraged people to write in to you directly, I am using my submission to reflect the views of the people I have spoken with in all parts of the Perth Hills.

Yours sincerely,

Hon Alison Xamon MLC

Member for East Metropolitan

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Perth Hills Bushfire February 2011 Review

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Contact Details

Name:	Hon Alison Xamon MLC
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Organisation Details (Where Applicable)

Is this submission presented on behalf of an organisation:	No
If yes, name of organisation:	
Position in organisation:	

Response to Terms of Reference

You must address at least one of the Terms of Reference.

The impact of land use, environmental and building laws, practices and policies in the affected areas, affecting bushfire prevention, mitigation and response and what, if any, changes may be required.

One of the primary concerns that has been raised with me by the residents of the Perth Hills is the ongoing process of development and subdivision in high and extreme fire risk areas in the Perth hills.

One of the major concerns amongst residents is that the topography of high and extreme fire risk areas makes it extremely difficult to manage the fire risk, even with an approved fire plan in place.

An example of this is the recent approval of Brigadoon Stage 3 subdivision. The conditions of approval contained both environmental and bushfire management provisions, which often seemed to be working at cross-purposes to each other.

While requiring a substantial amount of clearing for the purposes of protecting the new residents from fire, the conditions also require the proponent to revegetate the steep hillsides below the subdivision and to provide 1000 trees per lot for owners to revegetate their properties.

Further, the level of concern expressed by those who would be on the front line fighting any fires do not seem to be reflected in the planning and approval process at any point. Even with fire conditions in place that will seriously compromise the structure of the 'good' and 'excellent' bush, I have had strong feedback from SES and local bushfire volunteers that they are horrified that a subdivision has been approved for this area.

Further, I have been told by the people who will be doing it, that the logistics of fighting fire in this subdivision will be extremely difficult.

This situation is not unique and similar concerns have been expressed by residents as to existing and proposed development on the southern end of the scarp.

Another suggestion the residents have put forward is the need to review the building codes to insist on greater fire-resistance of houses and surrounding vegetation.

Recommendations:

- The planning of new subdivisions in high and extreme fire-risk areas be reviewed, considering the ongoing drying of Perth's climate.
- Where environmental requirements for approval under the EPA or EPBC Act and fire management requirements seem to conflict, that these provisions be more clearly explained to concerned community groups – or further, that the value of building a subdivision on that particular site be reviewed.
- Review building codes for homes being built in high and extreme fire-risk areas.

The adequacy and effectiveness of information and communication campaigns and mechanisms, including systems for alerting residents in relation to the fire or potential fires.

Many concerns have been raised with me regarding the State Alert system and the speed at which warnings make it to the FESA website and phone-line. Uploading of information on the internet about current fires, fire threats and potential fire warnings on the website should occur immediately after the information is available. This should include all small fires. The information should be described by adjoining roads and also be connected to a suitable map, eg. Google Maps or NearMap for easier understanding.

I have been advised by many constituents that the State Alert system for calling/faxing people about their fire danger either doesn't work (particularly in mobile phone black spots), or provides information too late for it to be of assistance in deciding whether or not to evacuate. Mobile phone towers may also be vulnerable to fire, making a reliance on mobile phone advisories unwise.

The complaints I am hearing are from people who are aware of their fire-risk and who have tried to engage with this system with the hope of maximising the amount of useful information they have when making decisions regarding the safety when fires are nearby.

The residents certainly want automatic radio and television interruptions announced on all airways to ensure maximum coverage, and have them run every 15 minutes with updates continuing throughout the period of the emergency.

I am also hearing feedback that people are becoming blasé about the look of the fire-danger signs. The residents have suggested instead that fixed and mobile solar-powered signs could impart urgent fire information, which could be centrally updated and which could show educational information, including information on the use of heat or spark-generating equipment.

They also suggested that mobile signs could also be used during an emergency to divert traffic flow away from the emergency situation and to give updates on disaster information to the public.

Recommendation

- Extensive use of the internet for information about fires, fire threats and fire warnings immediately after the information becomes available to FESA, is warranted. All information should be supported by maps.
- Information about fire risk and the responsibility of individuals needs to come through multiple media channels as a priority
- Location and use of fire danger signs to be reviewed.

Improvements that can be made in relation to the coordination of activities across all levels of government, including with volunteer groups.

I am aware that some streets in fire-prone areas in my electorate have already commenced the process of creating shared lists of names and contact details of the people on their street to ensure that everyone can contact everyone else in the event of another disastrous fire.

The community would welcome assistance from the Government to set up similar, local schemes, along with some information on how best to look after one's neighbours in the event of a fire. Potentially this could be funded by the State, and developed as a community program by local Governments.

Recent legislative changes have meant that non-compliance with road closures is subject to very substantial fines. Sometimes a road closure can have a severe impact on a particular individual.

Hon Giz Watson's office has been approached by a couple who, while they do not live in the Perth Hills area, do live in a bushfire risk area and presented a concerning scenario. The couple live on a self-sufficient block and have complied with all requirements regarding firebreaks. One of the people is confined to a wheel chair and has limited use of her hands.

She needs a special vehicle to travel in as she also suffers from Multiple Chemical Sensitivity (MCS). She needs 24 hour care by her husband. From time to time the husband leaves the property to purchase groceries or attend doctor's appointments. He is reluctant to leave his wife alone, especially during the bush fire season.

The husband is particularly concerned about any road closures during a bush fire that would prevent him from getting back home to care for his wife. Also her condition as a sufferer of MCS limits the feasibility of being transported in any other vehicles and the possibility of using any shelter.

Recommendations:

- Assist the community in developing neighbourhood schemes to assist each other to proactively care for other's safety in the event of a fire.
- That there be an audit of the Perth Hill's population with regards to special care needs which might require priority evacuation or a special exemption for access to a particular property.
- To examine the special needs of sufferers of MCS and other impairment in case of evacuation.

Submission to the
Perth Hills Bushfire February 2011 Review

Submissions should be submitted electronically (preferred) to:

or posted to:

Perth Hills Bushfire February 2011 Review
Locked Bag 10, Cloisters Square
PERTH WA 6850

Note: All submissions received will be made available on the Inquiry's website. People wishing to make a confidential submission should make this clear at the time of lodgement and the Inquiry will not publish those submissions**.** However, people should be aware that whilst every endeavour will be made to ensure confidentiality, there is a possibility that such submissions might be released in accordance with the *Freedom of Information Act 1992.*

Contact Details

Name:	Mark Luzi
Address:	
Email address:	
Telephone number:	

Organisation Details (Where Applicable)

Is this submission presented on behalf of an organisation:	Yes
If yes, name of organisation:	Shire of Mundaring
Position in organisation:	Director Statutory Services

Response to Terms of Reference

You must address at least one of the Terms of Reference.

1. **The adequacy of current preventative measures, specifically prescribed burning and other bushfire mitigation activities.**

The Shire of Mundaring is regarded as having an extreme risk of loss and damage from wildfire to the community and its assets.

The Shire continues to investigate and improve mitigation activities to reduce bush fire risk. The activities currently carried out are as follows:

1. *A continued strong partnership with FESA.*

   - *The employment of a Community Fire Manager jointly funded between FESA and the Shire who also is appointed Chief Bush Fire Control Officer.*

   - *Two deputies to assist the Chief, one employed and funded by the Shire for 2 days per week.*

   - *Administration support to the Community Fire Manager and Deputy Chief Bush Fire Control Officers funded by the Shire.*

2. *Administration and support for 9 Volunteer Bush Fire Brigades, which include over 400 members.*

   - *Ongoing upgrades and improvements to vehicles, equipment, communications and protective clothing to assist volunteers in their role.*

     Noting that the equipping of Volunteer Bush Fire Brigades is via ESL funding, no funding is available to assist the Shire in regard to roles in fire management. An example of the strong partnership with FESA is the recent initiative for replacement of light tankers with 1 x4 vehicles where Brigades currently have in excess of one light tanker this will better manage water capacity and transferring fire fighters to the fire ground.

3. *Support and administration of the Mundaring Fire Fighters School. This school is run by volunteer trainers, and last year conducted over 20 training courses to approximately 185 bush fire brigade members.*

4. *Support for Bushfire Ready groups, community fire information meetings and targeted fire safety letters to residents.*

5. *Upgraded Fire Danger Signage erected in high visibility areas and roads linking town sites. The use of electronic variable message trailers on highway to pass on fire safety messages.*

6. *Active implementation of the Bush Fires Act and Regulations, including Bans, Prohibited and Restricted Burning Times, control of Burning Permits, etc.*

7. *Increased capacity of Community Safety Rangers utilised to conduct Fire Hazard Inspections on properties throughout the Shire from 1 December until 31 March each year, this funding is provided by the Shire.*

- *This fire season 3863 inspections were carried out, 58 properties were issued 10 day improvement orders and 18 infringement notices issued.*

8. *Revised Section 33 Firebreak Notice for property owners. Previous notice updated to include improved fire mitigation requirements such as slashing longstanding grasses, firebreaks around structures as well as property boundaries, Building Protection Zones, reducing fuel loads in natural bush areas, etc (See attached).*

9. *Slashing and herbicide spraying program for the control of non-native vegetation on Shire Reserves and verges.*

10. *Slashing on Government Reserves (UCL & UMR) utilising contract staff.*

11. *The Shire under the direction of the Community Fire Manager has implemented a program of Reserve Inspections for over 900 parcels of land throughout the district, resulting in assessment and collation of mitigation works required.*

12. *Program of prescribed burning on Shire and Government reserves, as detailed in the Strategic 3 Year Burn Plan, as a result of staff inspections and community feedback. This includes assessing fuel loads and developing burn prescriptions prior to conducting burns. Further liaison with the Shire's with Environmental Services and Reserve Friends Groups in regard to burns, to ensure Environment issues are given due consideration.*

13. *Upgrade of Shire and Government reserve firebreaks and access tracks utilising contractors.*

    - *the Shire will be considering the employment of 2 officers to form a bush reserves, mitigation team, to further enhance the works as described in above noting this will require Shire funding of an additional amount of approx $200,000.*

    - *The Shire is required to provide funding for on-ground works.*

14. *Production and mail out of Fire and Burning Information booklet to all ratepayers. This booklet also includes the Shire Firebreak notice (See attached). Once again this is funded by the Shire.*

15. *Promotion of the FESA Winter Burning Program in local papers, Shire promotion and by local brigades. The FESA booklet and cd are free, and assists property owners by building confidence to carry out mosaic burns to reduce fuel loads on their properties as unmanaged fuel levels on private properties contribute to increased fire behaviour.*

16. *Ongoing hydrant infill program to improve access to water, and reduce turnaround times for fire fighters.*

- *noting this requires funding from the Shire.*

17. *Installation and maintenance of Static Water Supply tanks in un-reticulated areas. The Shire does where legislated to do so, request tanks to be provided by the developer of new subdivisions. The Shire is then required to maintain these facilities.*

18. *Updated Fire Safety information on Shire website including links to FESA Alerts, The Shire has developed and implemented Harvest and Vehicle Movement ban process and information, fire danger and permit information.*

19. *Fire Information phone line updated daily by the Shire's Community Safety staff with Fire danger ratings, harvest and Vehicle bans, etc.*

2. The impact of land use, environmental and building laws, practices and policies in the affected areas, affecting bushfire prevention, mitigation and response and what, if any, changes may be required.

The Shire is compiling a Bush Fire Access/Egress Strategy.

- *Completion of Access/Egress safety report investigating possible solutions to limited access, blocked public roads and access ways. Shire funding upgrading to areas identified, forming tracks, removing obstacles and installing signage in an ongoing program to improve public egress during emergencies across the district.*

The Shire is currently reviewing its operative Town Planning Scheme, included is a special control area for bush fire hazard assessment. This will call up planning for bush fire protection and the Australian Standards for Building Construction (AS 3959). I believe that other than the Shire of Busselton, the Shire of Mundaring may be the only other shire considering these requirements.

In March 2011 the Shire of Mundaring provided detailed comments on the Planning for Bush Fire Protection Guidelines, prepared by WAPC and FESA. The Shire's submission was comprehensive and addressed many issues. We are able to make a copy of this submission available to the enquiry should you wish.

However, one particular aspect of those guidelines is worth emphasising here. That is that the guidelines do not adequately address the issue of bushfire protection in existing zoned/developed areas which are bush fire prone. Following is an excerpt from the Shire's submission, dealing with that particular issue:

Throughout the State, and particularly in the Shire of Mundaring, many thousands of dwellings exist in areas of extreme bush fire hazard, along with many vacant lots on which dwellings are still to be built. These areas, residential and rural residential, are on lots approved and created by the State government,

generally in zones that were approved by the State government (both in local schemes and the Metropolitan Region Scheme).

Given the potential risk to lives and property in these areas, as graphically demonstrated recent bushfires, it would be appropriate for the State government (Dept of Planning and FESA) to show leadership and responsibility and better address the issue of retrospectivity, rather than "handballing" it to individual local governments to figure how to try the use the guidelines retrospectively.

As it is, PFBFPG merely indicates that the guidelines are not intended to be enforced retrospectively, but that the information in the guidelines should be applied wherever practicable by applicants and decision makers. As a bare minimum, a revised PFBFPG should stipulate that, to the extent that compliance is practicable, the performance criteria and acceptable solutions should apply in all bushfire prone areas.

However, it would be preferable if further guidance could be given on which aspects of PFBFPG should be applied retrospectively to existing development, or to new development in existing subdivisions, with new performance criteria and acceptable solutions introduced for such scenarios if appropriate.

The wording of the first dot point in the 7th paragraph could infer that PFBFPG performance criteria and acceptable solutions should actually apply to new buildings in established subdivisions, although this would contradict the first sentence of the paragraph.

The second dot point in the 7th paragraph means that structure plans that are ten or more years old, and in which subdivision has not yet taken place, could still be valid, despite inadequately addressing bushfire hazard. It might be desirable, where little or no subdivision has taken place, to revoke any such structure plans and require a redesign consistent with PFBFPG.

The third dot point in the 7th paragraph relates to subdivisions that have been approved but not yet developed (presumably this means subdivisions given preliminary approval only). Subdivision approvals are time-limited, specifically because the planning context changes over time. It should be specified that applications for re-approval of such subdivisions will be assessed against PFBFPG.

The Shire of Mundaring has introduced a bushfire hazard Special Control Area (SCA) in its draft new Local Planning Scheme No. 4 (LPS 4) (currently being advertised for public comment) and in this SCA (covering areas of extreme and moderate bushfire hazard) all dwellings will require planning approval. AS 3959 requirements will apply, as will PFBFPG performance criteria and acceptable solutions. Nonetheless, it would be very helpful to the Shire if PFBFPG specifically indicated how it should be retrospectively applied.

The Community Fire Manager is actively involved in the assessment of development and subdivision applications providing advice on fire safety and management matters.

3. The actions that can and should be taken by landowners, residents and tenants in relation to bushfire risk management including undertaking vegetation clearance, operation of evaporative air-conditioners and storage and/or removal of hazardous inflammable material surrounding their dwellings and buildings. This should include consideration of associated enforcement regimes and penalties.

Some residents/landowners do not undertake necessary and or adequate risk management activities citing reasons such as:

- *I am/we are insured anyway.*
- *I/We intend to leave if there is a fire*
- *The fire brigade will put out the fire*
- *Complacency*
- *It won't happen to me*

The Bush Fire Act could be reviewed to ascertain if enforcement provisions need to be reviewed to include a greater range of fire prevention/mitigation activities. Penalties should also be reviewed.

4. The adequacy and effectiveness of information and communication campaigns and mechanisms, including systems for alerting residents in relation to the fire or potential fires.

Local Government has limited resources in terms of information and communication programs. State funded TV/Radio/Newspaper campaigns are warranted.

In regard to State Alert, more communication and education must be given that advises the community, State Alert will be only of assistance should a fire be some distance from their property and may be impacted.

During the recent Kelmscott fire, residents complained the State Alert was too slow, this criticism I believe was due to the misunderstanding of the State Alert process.

If a fire starts close to a property, first the fire needs to be spotted and phoned in, a bush fire brigade called out, a response time may be between 10-25 minutes before fire fighters are on site. A FESA office must attend and assess the situation, determine possible spread of fire, requests State Alert to be activated, generally the quickest response would be minimum of 45 minutes.

As stated if a fire commences close to property, the impact will be within minutes, State Alert will not be of assistance to these property owners.

The Shire is in the process of installing a weather station in Mundaring to allow not only Shire staff but residents to have web access to be able to have access to up-to-date weather information.

The Community Fire Manager is currently working with Acacia and Wooroloo Prisons to develop new bush fire response plans.

5. Improvements that can be made in relation to the coordination of activities across all levels of government, including with volunteer groups.

The liaison with the Shire Bush Fire Brigades, Shire councillors and staff, the joint FESA/Shire of Mundaring Community Fire Manager and FESA district and regional management is very effective within the Shire of Mundaring. The CFM, CESM program should be extended and FESA senior management need to meet more often with local governments.

CONCLUSION

As detailed above, the Shire of Mundaring is very proactive with its involvement with Bush Fire Preparedness and actions in relation to bush fire control.

The ESL has been an affective program enabling funds to be directed to volunteer bush fire brigades. However, the Shire has extreme risk areas which need assistance to manage mitigations and administration of bush fire issues within these areas.

The Shire would like a review of the ESL to allow funding to local governments for the required activities in high risk areas as detailed in this submission, or a separate government fund be implemented. Currently there is only limited funding for this purpose available via the local government budget process.

A source of increased funding would have a major effect on the Shire's ability to take additional and necessary measures in reducing bush fire risk in extreme areas.

FIREBREAK NOTICE
Bush Fires Act 1954
Shire of Mundaring

Notice To All Owners And/Or Occupiers Of Land
Situated In The Shire Of Mundaring.

As a measure to assist in the control of bush fires, or preventing the spread or extension of a bush fire which may occur, all owners and occupiers of land within the Shire's district are required before the 1st day of December in each year, or within 14 days of becoming the owner or occupier of land if after that date, to clear firebreaks or take measures in accordance with this notice and maintain those firebreaks and measures in accordance with this notice up to and including the 31st day of March in the following year.

Pursuant to the powers contained in Section 33 of the Bush Fires Act 1954, you are hereby required to clear of flammable material firebreaks not less than 3 metres in width, and 4 metres in height, immediately inside all external boundaries of any lot owned or occupied by you and situated within the Shire of Mundaring. Such firebreaks may be constructed by one or more of the following methods:

PLOUGHING, CULTIVATING, SCARIFYING, RAKING, BURNING, CHEMICAL SPRAYING OR OTHER APPROVED METHOD,

The following land categories are to be cleared and maintained to the satisfaction of an Authorised Officer of the Shire.

1. All land zoned Residential with a building on it.

- Maintain all grass on the land to a height no greater than 5cm.
- Prune trees and shrubs, and remove dead flammable material around all structures to provide a building protection zone.
- Ensure the roofs, gutters and walls of all buildings on the land are free of flammable matter.

On any lot having an area of less than 4,000m² with a dwelling constructed on it, where the lot is substantially developed (i.e. at least 75% cleared of natural vegetation), the keeping of grass on the lot at all times covered by this notice to a height less than 5 centimetres will be accepted in lieu of clearing a firebreak. For the purpose of Section 1 grass kept at a height of less than 5 centimetres will be deemed not to be flammable material.

2. All vacant land zoned Residential.

- Maintain all grass and dead flammable matter on the land to a height no greater than 5cm.
- Install a 3 metre wide firebreak immediately inside all external boundaries of the land by removing all flammable matter within that 3 metre wide firebreak to a height of 4 metres.

3. All land zoned other than Residential, with a building on it.

- Maintain all grass and clear dead flammable matter on the land to a height no greater than 5cm.

- Install a 3 metre wide firebreak around all structures and immediately inside all external boundaries of the land by removing all flammable matter within that 3 metre wide firebreak to a height of 4 metres.

- Prune trees and shrubs, and remove dead flammable material around all structures to provide a building protection zone.

- Ensure the roofs, gutters and walls of all buildings on the land are free of flammable matter.

- Maintain fuel loadings in natural bush areas at less than 8 tonnes per hectare across the land.
  Note: On average, leaf litter accumulates at approximately 1 tonne per hectare per year.

4. **All vacant land zoned other than Residential.**

- Maintain all grass on the land to a height no greater than 5cm.

- Install a 3 metre wide firebreak immediately inside all external boundaries of the land and within 20 metres of any haystacks or stockpiled flammable material, by removing all flammable matter within that 3 metre wide firebreak to a height of 4 metres.

- Maintain fuel loadings in natural bush areas at less than 8 tonnes per hectare across the land.
  Note: On average, leaf litter accumulates at approximately 1 tonne per hectare per year.

(For the definition of flammable material and Building Protection Zone please refer to the Shire of Mundaring Fire and Burning Information Booklet.

5. Livestock

If the land is stocked, the livestock must graze the grass down so that the grass is no greater than 5cm high prior to the end of December of that year.

6. Fuel Dumps and Depots.

Remove all inflammable matter within 10 metres of where fuel drums, fuel ramps or fuel dumps are located, and where fuel drums, whether containing fuel or not, are stored.

7. Application to vary the above requirements.

If it is considered impracticable for any reason whatsoever to clear firebreaks or establish other arrangements as required by this notice, you may apply in writing to the Shire of Mundaring not later than the 15th day of November each year for permission to provide firebreaks in alternative positions on the land. If permission is not granted in writing by the Shire you must comply with the requirements of this notice.

In addition, you may be required to carry out further works which are considered necessary by an Authorised Officer of the Shire and specified by way of a separate written notice forwarded to the address as shown on the Shire of Mundaring rates record for the relevant land.

TAKE NOTICE that pursuant to Section 33(4) of the Bush Fires Act, where the owner or occupier of land who has received notice fails or neglects to comply with the requisitions of the notice within the time specified, the Shire of Mundaring may by its officers and with such servants, workmen and contractors, vehicles and machinery as the officers deem fit, enter upon the land and carry out the requisitions of the notice which have not been complied with and pursuant to Section 33(5) of the Bush Fires Act the amount of any costs and expenses incurred may be recovered from you as the owner or occupier of the land.

All firebreaks and other alternative arrangements allowed by the preceding parts of this notice must be established by the 30th day of November each year (or within 14 days of you becoming the owner or occupier should this occur after that date) and maintained clear of flammable material up to and including the 31st day of March each year.

If the requirements of this notice are carried out by burning, such burning must be in accordance with the relevant provisions of the Bush Fires Act.

THE PENALTY FOR FAILING TO COMPLY with this notice is a fine not exceeding $5,000 and a person in default is also liable whether prosecuted or not to pay the costs of performing the work directed by this notice if it is not carried out by the owner and/or occupier by the date required by this notice.

By order of the Council

Jonathan Throssell
CHIEF EXECUTIVE OFFICER

SHIRE OF MUNDARING

FIRE AND BURNING INFORMATION

2010-2011

PERMITS TO BURN ARE REQUIRED

October 1st to November 30th (inclusive)
April 1st to May 31st (inclusive)
CAUTION Dates subject to seasonal changes

TO REPORT ALL FIRES RING 000

FOREWORD

Dear Resident,

It is hoped that information in this document will help you to prepare your property to a standard, which will protect you and your neighbours from damaging bush fires. The document outlines strategies to prepare for the fire season and to assist you to meet the conditions, which are required by legislation.

Preparing for fire is the responsibility of every resident, and if each member of the community maintains a proper level of preparedness, the threat of bush fire will be greatly minimized.

Many members of the community make themselves available to respond to threats through their membership of the Volunteer Fire Brigades and State Emergency Service units. The Shire of Mundaring supports these organisations. Your efforts in preparing your property will enhance the effectiveness of the volunteer brigades should a fire occur.

Your feedback on the information in this document would also be welcome. You could send your comments by post or email, or simply call Community Safety

Jonathan Throssell
CHIEF EXECUTIVE OFFICER

INDEX

CALENDAR OF BURNING RESTRICTIONS.

PROHIBITED NO FIRES			
DEC	**JAN**	**FEB**	**MAR**
RESTRICTED PERMITS NEEDED			
APR	**MAY**	**JUN**	**JUL**
		RESTRICTED PERMITS NEEDED	
AUG	**SEP**	**OCT**	**NOV**

These dates may vary due to seasonal conditions
If in doubt – call the Shire of Mundaring

BURNING PERIOD DATES 2010/2011

These dates may vary due to seasonal conditions

RESTRICTED BURNING PERIOD 1
October 1st to November 30th (inclusive)

Permits to burn are required for all burning during this period.
Note that small amounts of garden refuse may be burnt without a permit after 6 PM, see conditions

PROHIBITED BURNING PERIOD
December 1st to March 31st (inclusive)

All burning, including garden refuse is prohibited during this period

RESTRICTED BURNING PERIOD 2
April 1st to May 31st (inclusive)

Permits to burn are required for all burning during this period.
Note that small amounts of garden refuse may be burnt without a permit after 6 PM, see conditions

Important Notes;

- **Climate or weather conditions may cause these periods to be varied. Period variations will be advertised in local papers and also on the Shire of Mundaring website.**
- Permits to burn may ONLY be obtained from your local Volunteer Fire Station. Locations and contact detail are at the rear of this booklet.
- **ALL** burning is prohibited on days of Very High or above fire danger ratings.

FIRE DANGER RATING

No fire of any kind may be lit on a day when the forecast Fire Danger Rating for the District is Very High or above.
The fire danger rating is supplied daily by the Bureau of Meteorology.
This information is available on the Shires information hotline and is also displayed on the Information Boards located at (1) Great Eastern Highway at the top of Greenmount Hill ,(2) Great Eastern Highway East of the Mundaring Light Industrial area and (3) Stoneville Road/Riley Road intersection, Stoneville.
This information is also available from the Telstra Weather service on and also from the Bureau of Meteorology website (www.bom.gov.au)
The Mundaring fire weather district is Lower West Inland.

FIREBREAK NOTICE
Bush Fires Act 1954
Shire of Mundaring

Notice To All Owners And/Or Occupiers Of Land
Situated In The Shire Of Mundaring.

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Pursuant to the powers contained in Section 33 of the Bush Fires Act 1954, you are hereby required to clear of flammable material firebreaks not less than 3 metres in width, and 4 metres in height, immediately inside all external boundaries of any lot owned or occupied by you and situated within the Shire of Mundaring. Such firebreaks may be constructed by one or more of the following methods:

PLOUGHING, CULTIVATING, SCARIFYING, RAKING, BURNING, CHEMICAL SPRAYING OR OTHER APPROVED METHOD,

The following land categories are to be cleared and maintained to the satisfaction of an Authorised Officer of the Shire.

1. All land zoned Residential with a building on it.

- Maintain all grass on the land to a height no greater than 5cm.
- Prune trees and shrubs, and remove dead flammable material around all structures to provide a building protection zone.
- Ensure the roofs, gutters and walls of all buildings on the land are free of flammable matter.

On any lot having an area of less than 4,000m² with a dwelling constructed on it, where the lot is substantially developed (i.e. at least 75% cleared of natural vegetation), the keeping of grass on the lot at all times covered by this notice to a height less than 5 centimetres will be accepted in lieu of clearing a firebreak. For the purpose of Section 1 grass kept at a height of less than 5 centimetres will be deemed not to be flammable material.

2. All vacant land zoned Residential.

- Maintain all grass and dead flammable matter on the land to a height no greater than 5cm.
- Install a 3 metre wide firebreak immediately inside all external boundaries of the land by removing all flammable matter within that 3 metre wide firebreak to a height of 4 metres.

3. All land zoned other than Residential, with a building on it.

- Maintain all grass and clear dead flammable matter on the land to a height no greater than 5cm.
- Install a 3 metre wide firebreak around all structures and immediately inside all external boundaries of the land by removing all flammable matter within that 3 metre wide firebreak to a height of 4 metres.
- Prune trees and shrubs, and remove dead flammable material around all structures to provide a building protection zone.
- Ensure the roofs, gutters and walls of all buildings on the land are free of flammable matter.
- Maintain fuel loadings in natural bush areas at less than 8 tonnes per hectare across the land. Note: On average, leaf litter accumulates at approximately 1 tonne per hectare per year.

4. **All vacant land zoned other than Residential.**

- Maintain all grass on the land to a height no greater than 5cm.

- Install a 3 metre wide firebreak immediately inside all external boundaries of the land and within 20 metres of any haystacks or stockpiled flammable material, by removing all flammable matter within that 3 metre wide firebreak to a height of 4 metres.

- Maintain fuel loadings in natural bush areas at less than 8 tonnes per hectare across the land. Note: On average, leaf litter accumulates at approximately 1 tonne per hectare per year.

(For the definition of flammable material and Building Protection Zone please refer to the Shire of Mundaring Fire and Burning Information Booklet.

5. Livestock
If the land is stocked, the livestock must graze the grass down so that the grass is no greater than 5cm high prior to the end of December of that year.

6. Fuel Dumps and Depots.
Remove all inflammable matter within 10 metres of where fuel drums, fuel ramps or fuel dumps are located, and where fuel drums, whether containing fuel or not, are stored.

7. Application to vary the above requirements.
If it is considered impracticable for any reason whatsoever to clear firebreaks or establish other arrangements as required by this notice, you may apply in writing to the Shire of Mundaring not later than the 15th day of November each year for permission to provide firebreaks in alternative positions on the land. If permission is not granted in writing by the Shire you must comply with the requirements of this notice.

In addition, you may be required to carry out further works which are considered necessary by an Authorised Officer of the Shire and specified by way of a separate written notice forwarded to the address as shown on the Shire of Mundaring rates record for the relevant land.

TAKE NOTICE that pursuant to Section 33(4) of the Bush Fires Act, where the owner or occupier of land who has received notice fails or neglects to comply with the requisitions of the notice within the time specified, the Shire of Mundaring may by its officers and with such servants, workmen and contractors, vehicles and machinery as the officers deem fit, enter upon the land and carry out the requisitions of the notice which have not been complied with and pursuant to Section 33(5) of the Bush Fires Act the amount of any costs and expenses incurred may be recovered from you as the owner or occupier of the land.

All firebreaks and other alternative arrangements allowed by the preceding parts of this notice must be established by the 30th day of November each year (or within 14 days of you becoming the owner or occupier should this occur after that date) and maintained clear of flammable material up to and including the 31st day of March each year.

If the requirements of this notice are carried out by burning, such burning must be in accordance with the relevant provisions of the Bush Fires Act.

THE PENALTY FOR FAILING TO COMPLY with this notice is a fine not exceeding $5,000 and a person in default is also liable whether prosecuted or not to pay the costs of performing the work directed by this notice if it is not carried out by the owner and/or occupier by the date required by this notice.

By order of the Council

Jonathan Throssell
CHIEF EXECUTIVE OFFICER

BUILDING PROTECTION ZONE

Buildings should be protected by a building protection zone that meets the following requirements:

- Width: 20 metres measured from any external wall of the building
- Location: within the boundaries of the lot on which the building is situated
- Fuel load: reduced to and maintained at less than 2 tonnes per hectare
- Trees (crowns) are a minimum of 10 metres apart
- Trees are low pruned to a height of 2 metres at least
- No tall shrub or tree is located within 2 metres of a building (including windows)
- There are no tree crowns overhanging the building
- Fences and sheds within the building protection zone are constructed using non combustible materials (eg colourbond iron, brick, limestone)
- Shrubs in the building protection zone have no dead material within the plant
- Tall shrubs within the builing protection zone are not planted in clumps close to the building ie within 3 metres
- Trees in the building protection zone have no dead material within the plant's crown or on the bole

Notes to above:
to measure and determine fuel loads use FESA's visual fuel load guide.
Surface bush fire fuels should be kept low to the ground. Potential bush fire fuels should be kept green if possible

FIRE HAZARDS

It is the responsibility of the land owner to control fire hazards including;

- The provision of adequate fire breaks.
  The Fire Breaks and Driveways MUST allow unrestricted access free of obstructions and be suitable for emergency vehicle use.
  In some instances, naturally occurring features such as rock outcrops, watercourses or landscaping such as reticulated gardens, lawns or driveways may be an acceptable substitute for cleared firebreaks. This option must be approved in writing by an authorized officer of the Shire of Mundaring prior to 15 November.
- Slash all standing grass and flammable matter such as leaves, twigs, bark etc to a height of not more than 5cm.
- Ensure native bush is fire safe and ensure that bush fuel loads are not excessive. Bush fuel loads should not exceed 8 tonnes per hectare.
  As a guide, bush litter will accumulate at a rate of about 1 tonne per hectare per year.
- Ensure that all inflammable fuels are stored safely and well clear of all buildings.

Council is authorised to engage private contractors to carry out required fire hazard reduction work at the land owner's expense if you have failed to ensure your property is fire safe.

Flammable material is ALL combustible material, dead or alive, that may be likely to fuel a bush fire. It includes, but is not limited to, dead leaves, fallen branches, dry grass, bracken or any other combustible material. It does not include areas such as vegetable patches, tended lawn, landscaped gardens (including deciduous or ornamental planted trees) that in the opinion of an authorised Fire Control Officer do not constitute a fire risk. It also includes any tree or branch that may create a fire hazard by falling onto a building.

PERMITS TO BURN

Permits are required to burn bush or grass at any time during the restricted burning period. (See also "When Burning is Permitted").
Permits are **only** available from the Volunteer Bush Fire Brigade in your district.
(note Brigades can not issue permits for districts other than their own).
The times and contact details for permits can be found in the rear of this booklet.
The conditions for the burning of small quantities of garden rubbish without a permit after 6 pm are explained in this book, (see Burning of Garden Rubbish).

STACKS OR PILES OF VEGETATION

The Department of Environment and Conservation (DEC) prohibits the burning of vegetation on or from a development site where the area cleared is greater than 2000 sqm. This includes residential and construction lots. Such vegetation must be mulched or removed from the site and must NOT be burnt on site.

INCINERATORS

Incinerators must not be lit during the Prohibited Burning period or on any day when a Total Fire Ban has been declared.
Incinerators must not be lit if the Fire Danger rating is Very High or above.
During the Restricted Burning Period, incinerators may only be lit from 6 pm till 11 pm.
Incinerators must be properly constructed and designed to prevent the escape of any sparks or burning material. They must be located at least 2 metres away from any building or fence and all flammable material.
Household garbage or materials such as plastic and rubber which cause noxious smoke must not be burnt in incinerators. Smoke from incinerators must not cause a nuisance to other residents.

OUTDOOR COOKING

Gas or electric barbecues are permitted at any time.

Solid fuel barbecues, spit roasts, Webbers, pizza ovens and any other cooking fires are permitted at home, if the fireplace is properly constructed so as to prevent the escape of any sparks or burning material and is surrounded by a 3 metre fuel free zone.
A person MUST be in attendance at all times and a method of fire suppression such as a hose must be on hand.
Solid Fuel Cooking Fires **MUST NOT BE LIT** on days of Very High or above fire danger rating or on any day when a Total Fire Ban has been declared.

Many recreation sites within the Shire of Mundaring have gas or electric barbecues installed which may be used at any time.

WELDING/CUTTING/GRINDING (HOT WORK)

If you are using a welder(oxy-acetylene or arc), or gas flame for heating or cutting or operating a power operated abrasive cutting or grinding disc of any kind, you **must** have at least one fire extinguisher present and be surrounded by a five metre cleared area. Your local Fire Control Officer or other authorized officer of the Shire may impose additional conditions.
Extreme care should be exercised to prevent sparks from igniting dry grass/leaves etc.
All hot work operations are prohibited on any day when a Total Fire Ban has been declared.

VEHICLE AND MACHINERY OPERATIONS

The operation of vehicles and farm machines may create a bush fire risk.

- Farm machines should be kept clean of dust and vegetation.
- Fit spark arrestors to machinery exhausts.
- Check the underside of farm vehicles and machinery for any build up of straw or vegetation, particularly around exhaust systems and catalytic converters.
- Carry appropriate fire extinguishers that meet the requirements of the Bush Fires Act 1954.
- Vehicle and Machinery exhaust pipes **must** meet the requirements set out in the Bush Fires Act 1954 if they are to be operated during the Restricted or Prohibited Burning periods.

TOTAL FIRE BANS

Total Fire Bans are declared at times of extreme weather conditions or when widespread fires are seriously stretching resources.
They are declared on days where fires are most likely to threaten lives and property and consider local conditions such as how moist the soil is or the amount of trees and bush in an area that could burn during a fire.
When a Total Fire Ban is declared it is illegal to do anything that is likely to start a fire.
That means if you live in a Shire where a Total Fire Ban is in place you must not:

- cook outside using an open fire
- move vehicles or equipment across a paddock
- harvest
- undertake ‘hot work’ such as metal work, grinding or the like unless you have an exemption

During a Total Fire Ban you will still be able to:

- use a gas cooker or barbecue with an enclosed flame or an electrical stove at home or in a designated area. Many recreation sites within local government areas have gas or electric barbecues installed, which may be used at any time
- undertake essential feeding and watering of your stock (by exemption permit)
- use a chainsaw, plant or grass trimmer or lawn mower but it is best to postpone this work as it could still start a fire
- smoke but you must put out your cigarettes or cigars properly and safely dispose of the butt
- undertake any work covered by a current exemption as long as you meet any special conditions that apply.

You could be fined up to $25 000 or jailed for 12 months or both if you ignore the Total Fire Ban.

An exemption may be granted if you can show you are taking proper steps to prevent any fire spreading and can control and put out any fire that might start. Exemptions can cover specific times and locations and can be changed or cancelled at any time.

BURNING OF GARDEN REFUSE

Garden refuse must **not** be burnt at any time during the Prohibited Burning Period or on any day when a Total Fire Ban has been declared.

A permit is required to burn garden refuse **before 6pm** during the Restricted Burning Periods, and is subject to the conditions as set out on the permit.

Garden refuse may be burnt without a permit **after 6pm** during the Restricted Burning Periods, subject to the following conditions of the Bush Fire Act 1954 and the Health Act 1911.

- The pile of refuse being burnt does not exceed 1 cubic metre.
- A 5 metre wide area clear of flammable material surrounds the pile. (Lawn, Paths, Driveways, etc. may be considered as cleared area).
- The fire is only lit between 6:00 p.m. and 11:00 p.m.
- Only 1 pile is alight at one time.
- The fire is completely extinguished by midnight.
- At least 1 person is in attendance at all times.
- There is a means of extinguishing the fire available at all times. (e.g. garden hose, knapsack spray or fire unit).
- You notify your neighbours of your intention to burn.
- The Fire Danger Rating is not Very High or above.
- The smoke from your fire does not cause a nuisance to neighbours.
- The smoke from your fire does not create a traffic hazard.
- Do not burn household or commercial waste or any noxious materials.
- Do not burn damp, wet or green material at any time as this will cause excessive smoke.

Other than during the Restricted or Prohibited Periods, garden refuse may be burnt at any time, but care must be exercised.

Smoke from the burning of garden rubbish can cause nuisance and annoyance to other residents. Please consider this and plan to minimise smoke.

WHEN BURNING IS PERMITTED

(See also burning of Garden Refuse)

During the Restricted Burning seasons, a permit must first be obtained from your local Volunteer Bush Fire Brigade before you can burn on your property. Permits will stipulate times and other conditions which must be adhered to.

NO BURNING is to be conducted on any day when the forecast Fire Danger Rating is Very High or above.
NO BURNING may be conducted during the Prohibited Burning Period or on any day when a Total Fire Ban has been declared.

Burning to reduce the amount of fuel on a property is permitted without a permit only at those times outside of the Restricted or Prohibited burning season.

Plan the burn and apply for the permit well in advance. This will give you the opportunity to select the best conditions.
Obtaining a permit outside the times specified in this book may be difficult as permits are issued by volunteers from your local Fire Station which is not normally staffed.

When planning your burn, allow plenty of time and adequate resources to burn effectively and without undue rush or stress. Do not attempt to burn areas which will be difficult to control.
Fires will be extremely difficult to control in strong winds.
All planned burning activity should be deferred if the winds are expected to be above 10 km/hr. (definition of this is when leaves and twigs on trees are in constant motion).
Check the weather forecast before burning.

Guidelines and advice to assist in Winter Burning may be obtained from the Shire of Mundaring office or from your local Volunteer Bushfire Brigade.

Your Local Volunteer Fire Brigade may be able to conduct a burn on your behalf or give advice on how to burn. Contact details for local Brigades are included at the back of this booklet.

SAFETY
Obtaining a permit does not remove the responsibility to conduct the burning in a safe manner and does not remove the liability should the fire escape or cause damage.

ALTERNATIVES TO BURNING

There are a range of alternatives to burning waste which will not harm the environment and will not cause health problems for you or your neighbours.

Grass can be slashed, grazed or reduced with herbicide to reduce fuel loads. This may be a practical alternative particularly if erosion is a concern or in areas which are difficult to access.

Ratepayers and residents in the Shire of Mundaring are able to dispose of their green waste and garden refuse free of charge at the Waste Transfer Stations: Coppin Road, Mathieson Road or Mayo Road. Green waste can also be disposed of at the Red Hill Waste Disposal Facility (Toodyay Road, Gidgegannup), however charges apply (ph: 9574 6235).
The green waste material collected at the Waste Transfer Stations is mulched and sold commercially as garden mulch and compost.

Garden refuse (particularly grass clippings, leaves and twigs) can also be used as a mulch or compost in the garden to improve soils and the growth of plants.

If you have large quantities of green waste (branches, tree trunks) you can arrange for mobile mulching services to mulch the material on-site.
Mulching and composting at home avoids the need to burn off and is an environmentally friendly way to deal with green waste. For further information regarding composting, please contact the Shire of Mundaring on tel 9290 6666.

Mulch piles should be no larger than 5 cubic metres to reduce the risk of spontaneous combustion and piles should have a firebreak surrounding the pile.

PREPARE. ACT. SURVIVE

PREPARE. Preparing yourself, your family and your home is your responsibility. The more that you prepare your home, the better the chance that it will survive a fire, even if you have left well before the fire because your plan is to leave.

ACT. Bushfires can start suddenly so you need to be prepared to act even if you do not receive a warning. During hot weather you should know what the Fire Danger Rating for your area is, watch for signs of bushfire and have your survival plan and kit ready.

SURVIVE. During a bushfire the safest place to be is away from the fire. Being involved in a fire may be one of the most traumatic experiences of your life.

Bushfire Warning System.
During a bushfire emergency services will provide as much information to you as possible through a number of different channels.
There are three levels of warning. These may change to reflect the increasing risk to life and the decreasing time until the fire is expected to arrive.

An ADVICE will provide you with information on a bushfire that is not threatening lives or property but may be causing smoke near homes.

A WATCH AND ACT message will be issued when there is a potential for lives and property to be threatened. These messages will update you on the changing conditions and tell you to start taking action to protect yourself and your family.

An EMERGENCY WARNING means you need to take immediate action to survive. This message may or may not start with an alert sound called the Standard Emergency Warning Signal (SEWS).

STATE ALERT Bush Fire Warnings may be issued by State Alert to telephones registered to each area. For further information or to register additional telephones visit the website www.statealert.wa.gov.au

Information on large incidents within the Shire of Mundaring can be obtained from;

- The FESA web site (www.fesa.wa.gov.au)
- The ABC local radio station. (6WF 720 AM) at 30 minute intervals.
- The FESA emergency information telephone service 1300 657 209.

Developing a Bush Fire Survival Plan is critical. Your plan must be prepared and practiced with all members of your family or household before the start of the bushfire season.
In making your plan you will need to consider;

- Is your home defendable.,
- Is it in a location that makes it difficult or dangerous to actively defend?
- Who may be home if a bushfire occurs?
- If your household includes elderly, young, people with disabilities or illness, consider, can these people be re located?

Additional information including templates and checklists to help you prepare your bushfire survival plan are included in the booklet “PREPARE, ACT, SURVIVE”.

PREPARE FOR FIRES

Preparing for fires is essential to living in our fire prone landscape. Having a plan is the primary step to ensuring the survivability of your property and the welfare of you and your family.

Prepare your property thoroughly well before the fire season. It will be too late to prepare when a serious fire is threatening. Fuel loads influence the bush fire intensity. If the intensity of the fire is low, then there are more options available to fire-fighters to suppress the fire.
If you are planning to build or to undertake any building work, you are advised to comply with Australian Standard AS 3959 “Building in Bush Fire Prone Areas”.

You may also need to make provision for your pets and livestock.

Community services such as telephone, power and water supply are often damaged during major bushfires and may not be available to you when you need them.

If you are well prepared, your property has a greater chance of surviving a bushfire. This is enhanced even further if you stay and defend your house. However, you must be prepared. Remember that a threat to your property can not justify risking lives.
There may be days when even the best designed, well constructed and actively defended houses may not keep you safe.

If planning to leave, do so early to avoid the smoke and congestion on roads affected by fire.
This decision should be made very early to try and avoid panic and exposure to danger. Your plan to leave should be based on a series of triggers including the fire weather forecast for the day. Do not wait for a warning before acting. Keep watch for the signs of a bushfire especially smoke and flame.

It will be dangerous on roads during a bush fire. Visibility is greatly reduced, trees and branches may fall across roads and there may be emergency vehicles trying to access the area. Some drivers may become confused and drive in an unsafe manner.
Firefighters will often be working on or from the road; the risk to them from vehicles can be very high. The Police may close roads to control these risks and so access may not be possible.

The information on how to go about preparing your family and property for fire is available in a number of publications. The booklets “Are You Prepared?”, “Prepare, Act Survive” and the “Home Owner’s Bush Fire Survival Manual” are free and available from your local Volunteer Bush Fire Brigade, the Shire of Mundaring or via the FESA website www.fesa.wa.gov.au

The contacts for your Brigade are included in this booklet. Get to know your local Brigade, they will also be able to provide advice on how to prepare your property.

PREPARE YOUR SURVIVAL KIT

Prepare a bushfire survival kit before the bush fire season starts. This will help you get through the first few days after a fire. Make sure that you have transport and a bush fire survival kit ready regardless of whether you are going to leave or stay to actively defend your house.
Everyone must wear protective clothing to avoid injuries from sparks embers and extreme heat. Cover as much of the skin as possible with 2 layers of loose fitting clothing.
Avoid tight fitting, heavy or synthetic clothing.
Further information regarding survival kit and clothing is available from “Prepare, Act, Survive” Booklet.

ENHANCE YOUR PROPERTY PROTECTION

- Ensure that fire appliances can access all areas of your driveways, tracks and firebreaks by maintaining sufficient clearance from trees, rocks etc.
  Ensure that clearances at corners are enough to allow passage of a fire appliance.
- Ensure that your property number is displayed so that it can be easily seen at night from a distance of 10 metres to a vehicle travelling in either direction.
- Install approved smoke alarms. Test regularly and change batteries as needed.
- Keep your roof and gutters clear of leaves and combustible material
- Ensure that gas bottles will vent away from buildings if exposed to flame or heat.
- Store firewood and any other flammable material away from the building.
- Have a Fire Action plan prepared and discuss it with your family.
- During major bushfires, essential services such as power, water and telephone may be damaged and fail. Consider the provision of alternatives.
- If you have an alternative water supply, ensure that all components are clear of vegetation and that tanks, pumps, piping etc will not be damaged by fire.
- Exposed water piping should be metal and not flammable as fire damage to piping may severely impede the ability to control fire.
- Water storage tanks can be fitted with suction fittings to allow fire appliances to refill on site, greatly increasing their effectiveness.
  The correct fitting for tanks to allow fire appliance to draw from the tank is a 50 mm Male CamLock fitting. (available from most reticulation suppliers)
  If such fittings are provided it is essential to allow clear access to the tank for fire appliances and to provide signage at the property entrance.
- Ensure power lines are clear of all vegetation. (refer Western Power guidelines).
- Provide alternative exit ways from your property, gates allowing exit/access between properties will assist both your escape and fire appliance access.

There are many other practical suggestions for property protection in the FESA booklet “The Homeowners Bush Fire Survival Manual” available from your local volunteer Fire Brigade or from FESA or from the Shire of Mundaring.

nger ng	Fire Behaviour	Impact Potential	What Should I Do?
ophic	• Some fires will be unpredictable, difficult to control and move very fast • Flames will be higher than roof tops • Thousands of embers will be blown around your home causing other fires • Spot fires may start 20 kilometres ahead of the main fire	• People will die or be injured • A lot of homes and buildings will be destroyed • Well prepared, well constructed and actively defended homes are highly unlikely to be safe	• Put your survival first and lea the best option • It is safest to leave early, tha or the day before a fire starts
ger g	**Fire Behaviour** • Some fires may be difficult to control quickly and fast moving • Flames may burn into the tree tops • Embers may be blown around your home causing other fires to start • Spot fires may start two kilometres ahead of the main fire	**Impact Potential** • It is unlikely you will die or be injured, or your home will be destroyed • Well prepared and constructed homes that are actively defended are likely to offer safety during a fire	**What Should I Do?** • Put your survival first and leav that is hours before a fire reac • Put your bushfire survival plan action • Only stay and defend your ho well prepared, well constructe can actively defend it • If you are in doubt about defe your home, leave
gh 49 re y be d	• Some fires will be unpredictable, difficult to control and move very fast • Flames will be higher than roof tops • Thousands of embers will be blown around your home causing other fires • Spot fires may start six kilometres ahead of the main fire • Embers may be blown ahead of the main fire causing other fires to start close to the main fire	• There is a high chance you will die or be injured • Many homes and buildings are likely to be destroyed or damaged • Only very well prepared, well constructed and actively defended homes may offer any degree of safety	• Put your survival first and lea fire starts, it is the best optio • Put your bushfire survival pla action • Only stay and defend your h is well prepared, well constru you can actively defend it • If you are in doubt about defe your home, leave
31	• Some fires will be unpredictable, difficult to control and move very fast • Flames may be higher than roof tops • Fires can be easily controlled and are show more likely to be blown around your home causing other fires to start • Spot fires may start four kilometres ahead of the main fire	• It is highly unlikely you will die or be injured • Some homes and buildings will be destroyed or damaged • Well prepared and constructed homes that are actively defended are likely to offer safety during a fire	• Put your survival first and lea that is hours before a fire reac • Put your bushfire survival pla action • Only stay and defend your ho well prepared, well constructe can actively defend it • If you are in doubt about defe your home, leave
te 1	• Fires can be easily controlled and are show more likely to be blown around your home causing other fires to start • Spot fires may start four kilometres ahead of the main fire	• The risk to you, your home and actively defended homes are likely to offer safety during a fire	• Put your bushfire survival plan action • Only stay and defend your h is well prepared, well constru you can actively defend it • Ensure your family, home and is well prepared for the risk of • If you are in doubt about def your home, leave

*FDI means the Fire Danger Index. It is a number that represents the Fire Danger Rating based on how fast a fire would spread, difficulty for firefighters to put the fire out, temperature, relative humidity and wind speed.

Fires can threaten suddenly and without warning.
Know your fire danger rating, monitor local conditions, and keep informed.
Call 000 to report a fire.

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Know your fire danger rating, monitor local conditions, and keep informed.
Call 000 to report a fire.

VOLUNTEER FIRE BRIGADES

Volunteer Fire Brigades are called to fires via a paging and radio communications system. The 000 emergency number will put you in contact with FESA's fire services who will dispatch the nearest Brigade in the event of a fire. Volunteer Brigades should not be contacted directly to report a fire, the 000 network is the most efficient method.

Volunteer Fire Brigades are a valued and important part of our community. Brigades will welcome people who are prepared to join and assist in community safety and fire fighting. Training is available for all volunteers. It is not necessary to be an "active" firefighter as there are many roles which may suit your attributes such as administration, community safety programmes, headquarters operations, communications and welfare support. Please contact your local Volunteer Bush Fire Brigade for information on how to become involved in this vital community organisation.

The Emergency Services Levy which is collected for the Fire and Emergency Services Authority (FESA) through Local Government supports the volunteer and career fire brigades maintaining a high level of preparedness and equipment to enable fires to be suppressed efficiently.

The Glen Forrest Bush Fire Brigade and the Sawyers Valley Bush Fire Brigade also provide community safety information at:

www.Chidlow.bfb.asn.au
www.darlingtonfire.org.au
www.darlingrangevbfb.org.au
www.glenforrestfirebrigade.org
www.parkerville.bfb.asn.au
www.SawyersValley.bfb.asn.au

A Bushfire Ready Group may exist in your area; if not, you may wish to create one. Bushfire Ready Groups can enable residents to understand fire preparedness, offer advice and create support and contact groups in the event of a fire. For information about this contact the Fire and Emergency Service Authority's Community Safety Branch on 9323 9300 during normal business hours or visit FESA's Web Site at www.fesa.wa.gov.au

CONTACT NUMBERS
For Season 2010/2011

REPORT ALL FIRES TO 000

24 HOUR INFORMATION AND FIRE WEATHER HOTLINE 9290 6644

The Mundaring Fire Brigades are operated by volunteers and the fire stations are usually unattended. Should the public wish to contact a Brigade to obtain a fire burning permit or to seek advice on fire safety issues, the Brigade addresses and contact times are listed below.
Please note that a permit to burn may only be obtained from your local fire station.

- Chidlow Bush Fire Brigade -
  Hours Saturday 9.00am - 11.00am

- Darling Range Communication Brigade -
  No Permit issuing

- Darlington Bush Fire Brigade - .
  Hours Saturday 9.00am - 10.00am

- Glen Forrest Bush Fire Brigade -
  Hours Saturday 9.00am -

- Mt Helena Bush Fire Brigade -
  Hours Saturday 9.00am -

- Mundaring Fire and Rescue Service -
  Hours Saturday 9.00am - 10.00am

- Parkerville Bush Fire Brigade
  Hours Saturday 8.30am - 10.30am

- Sawyers Valley Bush Fire Brigade -

  Hours Saturday 9.30am - 10.30am

- Stoneville Bush Fire Brigade -
  Hours Saturday 9.30am - 11.00am

- Wooroloo Bush Fire Brigade –
  Hours Saturday 9.30am - .

Perth Hills Bushfires February 2011 Review

Submission of the Australian Broadcasting Corporation

INTRODUCTION

1. The ABC wishes to take this opportunity to provide a submission to the Perth Hills Bushfire 2011 Review.

2. The ABC is not an emergency services organisation but the ABC, and in particular ABC Local Radio, has been heavily involved in broadcasting in emergency situations on numerous occasions. The following submissions draw on that experience, including audience feedback, and are intended to raise issues which, in the ABC's view, warrant careful consideration by emergency services organisations.

3. ABC Local Radio has the ability to quickly broadcast, across Western Australia or on a more localised basis, emergency warnings received from emergency services organisations. The ABC would welcome any opportunity to work with emergency services organisations in Western Australia to improve the ABC's role in emergency broadcasting. We welcome opportunities to share knowledge and work together to better deliver emergency messages and warnings to the public.

4. The ABC's submission is directed to the following areas:
    - Timeliness of the communication of information by emergency services organisations
    - Clarity of emergency messages and warnings
    - Situations involving multiple emergency incidents
    - Organisation(s) responsible for communicating emergency messages

TIMELINESS OF THE COMMUNICATION OF INFORMATION BY EMERGENCY SERVICES ORGANISATIONS

5. For obvious reasons, it is important that emergency services organisations ensure that emergency warnings and messages are communicated to the public in a timely manner. This raises the obvious issue of ensuring that emergency services have in place appropriate protocols and procedures in this regard. It also raises the question of whether emergency services should make specific arrangements with members of the media who are willing to assist, in an effort to ensure the media receive emergency messages as soon as possible and hence can help communicate those messages by getting them to air at the earliest opportunity.

6. For example, consideration might be given to a procedure under which an Incident Controller (IC) communicates messages directly to media organisations to assist the speed in which vital information is able to be broadcast to the public.

An IC at the scene could telephone the studio directly to pass on emergency warnings. If ICs make that a priority, and the media organisation takes the call as a matter of priority (by way of, for example, the implementation of a "hotline" system such as that which the ABC has implemented), it would seem that should help to minimise the lag time in getting emergency information broadcast. The ABC recognises that ICs would not have "time to chat", and the ABC would be happy to look at developing a suitable protocol so that any IC calling to provide emergency information for broadcast could feel confident they would not be tied up for lengthy periods on air. The aim would be to limit the call to essential details and allow the IC to promptly get back to attending to his/her other duties.

7. The ABC understands that the new Chief Fire Commissioner in Victoria may have recently directed[1] that that fire controllers are to first check for danger to the public and, if such a danger exists, warn the public via communication to the media.

8. A second issue concerning timeliness of communication relates to planning. Emergency situations obviously place strain on emergency services organisations, but they can also present significant challenges for media organisations as well. If media organisations are provided with relevant information at an early stage, media organisations have a better chance of being able to ensure that appropriate resources are available for making emergency broadcasts. For example, if ABC Local Radio has been given advance notice that there is a significant risk of fires starting on a particular weekend, extra staff might be rostered on or at least put on stand-by so that ABC Local Radio is appropriately placed to meet the demands of broadcasting emergency warnings and otherwise providing appropriate coverage of the incident.

9. The ABC considers that it may be useful to have a protocol in place which addresses early provision of information to the media so as to assist the media to have available appropriate resources in circumstances when there is a significant risk of an emergency situation arising. For example, the protocol could provide for appropriate media representatives to be present at initial emergency briefings so that the media can then make staff planning decisions in an informed way. We believe a protocol for pre-event briefings and "heads up" advice would enable the media to better plan staffing so we can do our best work and assist in the most effective way to provide the public with relevant information in a timely manner.

CLARITY OF EMERGENCY WARNINGS AND MESSAGES

10. It seems to the ABC that the terminology currently used in emergency warnings and messages in Western Australia has the potential to cause confusion. For example, currently the expressions "fire ban", "total fire ban" and "harvest ban" are used and each means something significantly different, but we believe that our audience may not readily understand the differences. A "fire ban" means

[1] Information has been provided to the ABC that the direction is in the form of a "commander's intent", however the ABC has not verified the situation.

open fires must not be lit, but a “total fire ban” means a ban on lighting fires and on all “hot work” such as use of angle grinders or machinery that is likely to cause sparks. The phrase “total fire ban” does not seem apt to refer to these other hazards, and it seems so similar to the expression “fire ban” that the difference may not be readily recognised by the public. Calls to ABC radio stations suggest a high level of public ignorance about the hazards of “hot work” with respect to fires.

11. Further, we believe there is a chance the public may suffer from “message fatigue” as a result of the number and frequency of warnings and messages being issued, and that this reduces the effectiveness of those communications.

12. For example, Local Councils invoke “fire bans” in some communities for the entire duration of the “bushfire season” (October to the end of March). The ABC considers that the imposition of a season long “fire ban” may create a blasé attitude in the community in relation to fire risks. Further, particularly in conjunction with the similarity between the names “fire ban” and “total fire ban”, this may lead residents to believe - incorrectly - they live with a “total fire ban” all season - with the result that when a “total fire ban” is issued, its significance is not readily appreciated by the public.

13. Further again, the ABC notes that some terminology has had different meanings over the years. For example, last year (2010) when a “total fire ban” was imposed, it automatically meant a “harvest ban was also invoked. However, now (2011) a “total fire ban” does not automatically mean there is also a “harvest ban” for the area; the decision on whether to impose a “harvest ban” is now left to local shires to make. This alteration in the meaning of relevant terminology seems to have a potential to confuse the public.

14. Finally, if the Inquiry intends to consider the use the standard emergency warning sound (“SEWS”), the ABC offers the following comments about its use:

    a. The ABC believes that, if used appropriately, it is an effective device for attracting the attention of radio listeners and focussing their attention on warning messages.

    b. However, the ABC has received feedback from listeners that the sound of the SEWS is unpleasant and can increase anxiety levels such that if the SEWS is used repeatedly in a fairly short space of time, some listeners will cease to listen to broadcasts altogether.

    c. Playing the SEWS in a broadcast takes time, and if the SEWS was to be repeated too often then time spent broadcasting the SEWS could compromise the effectiveness of broadcasts.

    Accordingly, the ABC believes that while the SEWS can be effective, it is important that protocols for its use are considered very carefully.

SITUATIONS INVOLVING MULTIPLE EMERGENCY INCIDENTS

15. Broadcasting in situations involving multiple emergency incidents increases the difficulties in relation to ensuring that important information is being communicated to the public in an effective manner. For example, if there are multiple fires burning, the number of emergency warnings and messages being issued can increase to the point that the effectiveness of those communications may be compromised. In the ABC's view, it is particularly important in such a situation that emergency services carefully consider what emergency warnings and messages to issue and when each such communication should be issued, and/or to provide guidance to the media concerning the priority to be accorded to each emergency warning and message (in terms of getting those communications to air).

16. Experience suggests that the longer the list of emergency warnings and messages which are broadcast one after the other, the greater the chance that members of the audience will fail to take note of the warning or message which is relevant to them. Further, the longer the list of emergency warnings and messages, the greater the strain put on those involved in broadcasting them (simply keeping track of the messages and ensuring they are put to air). Further again, it is obviously not possible for all emergency warnings and messages to be read simultaneously so inevitably there is at least a short delay before some messages are read simply while other messages are being read. In the ABC's view, emergency services organisations need to keep these issues firmly in mind and take particular care and provide appropriate guidance when issuing emergency messages in circumstances involving multiple emergency incidents.

17. Finally, we repeat what has been said earlier concerning the use of SEWS. Situations involving multiple emergency incidents obviously raise particular concerns about the potential for "over use" of SEWS unless an appropriate protocol covering such situations is in place.

THE ORGANISATION(S) RESPONSIBLE FOR COMMUNICATION OF EMERGENCY MESSAGES AND WARNINGS

18. Further to the matters discussed above, the ABC urges consideration of a nationally standardised emergency warning and message system – at least in relation to terminology used in warnings and messages, and perhaps also in relation to the identity of the organisations responsible for communicating them.

19. While emergency situations are usually fairly localised, people in the area at the time of the incident may be from farther afield, e.g. people on holiday or who have moved interstate. In addition, emergency services personnel may be seconded from interstate when extreme situations arise, and even members of the media who are involved in broadcasting in emergency situations may be brought in from interstate in some situations. All of those factors point to there being a very real benefit in adopting a national system so that terminology is used consistently, thus reducing the scope for miscommunication.

20. In addition to providing for the consistent use of terminology, a national system could also provide for consistency as to which organisations in each State/Territory communicate different types of emergency warnings and messages. For example, Fire and Emergency Services Authority of Western Australia ("FESA") issues total fire bans in Western Australia. The BOM (in Western Australia) includes "fire danger warnings" in their publications, but does not reference total fire bans. The ABC's news department (and, we expect, the news divisions of other media organisations) monitors warnings issued by the BOM (as part of preparation of regular weather reports) and, if appropriate, includes those warnings in regular news bulletins. Accordingly, the ABC's newsrooms, as a matter of course, usually pick up fire danger warnings issued by the BOM - but the same cannot be said of total fire bans issued by FESA. Accordingly, if total fire bans – and indeed other weather-related emergency warnings and messages - were communicated by the BOM in Western Australia, that may assist in communication to the media and hence to the public. In particular, the ABC believes it would be helpful if the BOM communicated total fire bans in their publications. That happens in some other states, i.e. the BOM includes total fire bans in the weather warnings if such a ban has been issued by the relevant authority.