

FIREDOG

Community Internet Fire Alert

A Public Information System for major fire events and other emergencies.

This document should be regarded as a broad outline rather than a fully researched report.

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Introduction

Following the big fire in Kinglake National Park (Victoria, Australia Day 2006) there has been public concern over the confusion caused by the *interpretation* of fire updates put out by the Country Fire Authority, the Department of Sustainability and Environment and Media Outlets.

The Country Fire Authority website was overloaded at times, its latest fire updates were sometimes two hours old and the state - wide map provided by DSE gave a good overview but scant local information and relied on the use of street names and approximate distances in the reporting of incidents.

Adding to this, residents were confused, apprehensive and indecisive whether to fight or flee, and at times were panicked by media reports of incidents from unauthorised sources. Word of mouth warnings from friends spread quickly, causing further confusion. The major cause of the mass confusion has not been determined by an official enquiry yet, but common sense dictates it was most likely due to the fairly recent phenomena of mass text messaging to radio stations, and the indiscriminate reporting of such messages.

1.0 Overview

The following plan outlines a bushfire information scheme for residents of fire prone shires across Australia. In fact, any country with widespread internet access would benefit.

The scheme draws on volunteer community participation and expertise, and assists the work of the RURAL BRIGADES, the DSE, Local Council, Radio National and Community Radio by adding an accurate 'close-up lens' and a clear information filter to their media outlets.

In practice, each district would establish a Community Internet Fire Alert group in cooperation with the local RURAL BRIGADE. Each group is composed of web-savvy volunteers and a RURAL BRIGADE officer.

The key aspect of the plan is its presentation of information to the public as a dynamic graphic map, similar in principal to the 'weather maps' used in television.

Each group would receive a CD with a ready made website, and the instructions for operating the interactive map of their district.

In the event of a fire, the RURAL BRIGADE officer would be authorised to receive the latest developments direct from the nerve centre of operations and by monitoring the radio chatter of the local brigades with a frequency scanner, and also from personal calls to reliable eye-witnesses around the district to verify the reports.

The team would then plot the course of the fire on the district map and publish the update to the website when the Fire Officer is satisfied with its accuracy. Levels of authorisation can be added to the development site for online verification by Central Operations before the update is released to the public.

A State-wide initiative involving hundreds of volunteers could be introduced before next bushfire season without straining the resources of bushfire services, and would not need the creation of extra Government infrastructure.

The scheme may also tie in with FIREWATCH and similar community networks that are telephone – based.

Importantly, there would be no reliance on the Government's Internet services. The scheme would reduce bandwidth demand on Government Web Networks and would provide an alternative solution to expensive upgrades to existing government networks.

There would not be any serious demands on funds, resources or staff for the Local Brigades, the DSE, Local Council or Government.

The web software for this project is under development.

There is also a manual version that will be used as a fallback if needed.

1.1 The Website

Please view the prototype basic website with an example of a typical map:

<http://www.thereef.com.au/fire>

1.2 Setting up the Group

- Local Council assists residents to form a group and to establish a network local volunteers with professional expertise from within the Shire to take on shifts at the website HQ on major fire days.
- Volunteers would live in “safe” parts of the Shire and be free to leave their homes for a four hour shift. The HQ would be a centrally located household with an internet connection.
- The Group receives a CD of the website templates and installation instructions.
- The website is set up and tested.
- Meetings and Fire Drill days would be determined by the group.

1.3 Personnel and Equipment

The personnel and equipment needed to maintain and operate the system would be:

- **Web-savvy internet technician** – plentiful in any community. Local ISP’s, small business operators, students, computer clubs. Would operate the running of the website.
- **Graphic artist** – familiar with web graphics tools - photographers, students, printers, graphic designers, artists. Would operate the online graphics toolbox and (if needed) the fallback templates.
- **RURAL BRIGADE representative** – RURAL BRIGADE officer from local district Fire Authority. This might be an either retired or disabled officer with field experience who can

interpret the radio chatter between crews as well as the reports from Central Control, and is familiar with local landmarks.

- **Other interested parties welcome to participate** – Council Fire Officer, DSE representative.

Equipment required:

- **Home computer with internet connection, frequency scanner**
- **G3 Mobile phone** (in case of power cuts)
- **Laptop** (in case of power cuts)

Venue:

- **Local residence in safe area.**

Internet Service Provider:

- **Secure, fast server with excellent technical support.** (needed only for the fire season)

1.4 How it works:

At the website HQ, the information is gathered by the RURAL BRIGADE officer who works directly with the graphic artist to update the map with symbols that show clearly the current fire situation. The symbols represent:

the main fire	ember attacks
the fire front (where possible)	refuges (if applicable)
spot fires	road blocks
hazards	wind direction

The symbols come ready-made in an online website template and are superimposed over the shire map. The symbols can be moved, duplicated, deleted or reshaped by authorised personnel.

The Graphics Supervisor and the RURAL BRIGADE officer would together pinpoint new map coordinates as the information is gleaned from the frequency scanner or from Cental Control. The updated map is then checked off for accuracy by the RURAL BRIGADE and/or DSE officers before the web technician publishes the developments to the live website. Authorisation can be easily granted by Senior Officers at any distance via secure Web forms with check boxes, pin numbers, and provision for multiple sign-offs. Extra security features can be added to prevent premature publishing of updates. The centre of operations for the district website can therefore be established hundreds of kilometers from Cental Control, because the actual Websites are housed in the city on powerful Servers, accessible to all involved.

Fine tuning of local fire reports would result from direct communication between the RURAL BRIGADE officer and those on the fire front. Being locals, they would most likely know of each other and would be well familiar with local landmarks.

1.5 Operation

The web technician would need the usual skills required for uploading graphics and text to a website along with enough knowledge of computer and server problems to keep everything running smoothly.

The graphic artist would use an online toolbox similar to graphics programmes such as Photoshop, CorelDraw and Illustrator, with familiar tools and naming. He or she would be able to quickly manipulate the symbols and information with the online editor without the need for training.

The styles for the templates would be fixed so as to preserve maximum visual clarity and continuity and to prevent 'creative improvements'.

The update software is accessible online to authorised personnel via extra secure password protection to the Admin section of the test server. The system is to have clear control panels that would present no problem to the operators or the senior officials who would need to sign off on the update.

****see section 4.0 for further technical information including web hosting***

2.0 Example scenario

The following scenario illustrates how the recent Australia Day fires might have been covered in Nillumbik Shire by a group of local residents.

In this scenario, residents in the Shire have been informed by news media and council to go to the Nillumbik, RURAL BRIGADE or DSE Websites for Bushfire Information from which temporary banner announcements link to the Local Fire Alert site.

The linking website is only 'hit' on for a matter of seconds. Word of mouth has ensured most concerned residents are aware of the presence of the local map with its fire updates.

Wednesday	7.00 PM	Fire under way in Kinglake National Park. High Fire Danger Day expected.
Wednesday	8.00 PM	Local volunteers meet to activate plan. Fire authorities notified
Wednesday	8.30 PM	Current situation is plotted on map. Senior Officials are notified who then log in to the test site to view the updates. Each Official ticks an "approve" box. When all involved in the sign-off process have ticked their boxes, the software allows the site to go online with map of current situation.
Wednesday	9.30 PM	Site updates overnight if the fire is moving
Thursday	7.00 AM	Map is updated with overnight RURAL BRIGADE and DSE reports
Thursday	8.00 AM	Website volunteers arrive. RURAL BRIGADE officer analyses information from fire front and nearby towns. The information is plotted on the map, checked and uploaded.

Latest News items and map updates could follow every ten minutes.

This process continues throughout the day.

Thursday 1.00 PM Afternoon shift of volunteers arrive and continue broadcasting

Thursday 6.00 PM Evening shift arrives.

2.1 Local Brigades and DSE cooperation

The full cooperation of the Local Brigades and Government Environment Departments would be essential to monitor the field trials and to establish the accuracy, reliability and usefulness of the Plan.

Accuracy of information on the day is paramount. The participation of a Rural Brigade Officer would serve as the link to the official State Bushfire Control Centre.

The website demonstration has been reviewed by the Charlbers Lane fire group in St Andrews, (Victoria). All feedback was extremely constructive.

2.2 Local Council Cooperation

The cooperation of Local Council would be essential if only to place a redirect banner on the Council website on days of high fire danger. The Council's fire officers' participation would be welcome to assure the service is responsible, accurate and in the best interests of residents.

The Council need not train staff to operate the system, a safer level of expertise in Internet Technology is readily available from within the local community.

2.3 Informing the Public

Community awareness of the scheme would be relatively easy given the media attention it would attract.

The concept itself is such a home-grown commonsense response to this season's major fires that it is

bound to generate publicity in local papers, current affairs programmes, websites and other information networks. *(see How it Began, below)*

High profile local residents would undoubtedly lend their support to publicise the scheme. For instance in Nillumbik and surrounds, residents include the actors Kerry Armstrong, John Clark and Rod Mullinar.

2.4 Testing the Plan

A modest trial of the Plan could be held in Nillumbik. It is close to Melbourne and easily accessible for Government and RURAL BRIGADE observers. Nillumbik has a good online and email network, that could be used to recruit residents that were in the front line on Australia Day to participate in the trial.

The residents would treat the morning as a re-run of Australia day and check their computers for updates. Power failures could be taken into account, whereby participants without power on Australia day would switch to laptop (if available) or ring for information from a pre-organised tree of mobile phone numbers. It would be safe to assume that Radio National would be monitoring the latest updates from the website as well and would be broadcasting current information to Nillumbik residents.

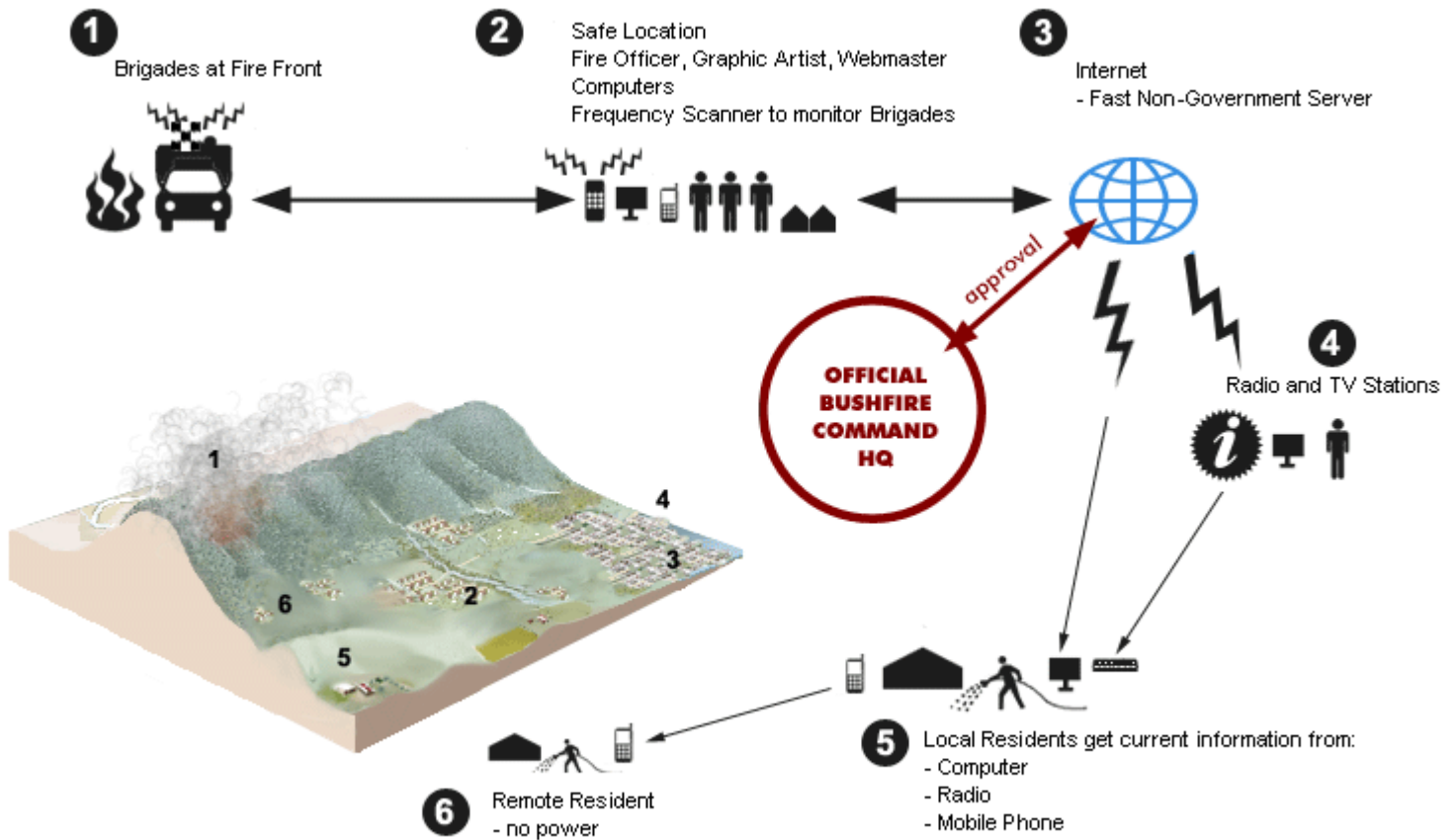
The local RURAL BRIGADE could send a couple of officers up to Kinglake to drive around and report on the 'fires' to 'base'. The information received by the Fire Officer would be processed at the test HQ and published to the trial website.

For a trial held in Melbourne, Australia, Nillimbuk residents Kim and Nu Lynch would be happy to offer their home for the exercise. They have the dwelling, equipment and facilities that would be typical of a 'headquarters' in other shires on days of high fire alert. Their residence is well positioned, being fairly central at Wattle Glen which is out of the 'front line' fire zones and easily accessible to all volunteers and observers.

A resident of Warrandyte, Jelle Jager would offer his time to manage the website.

Mr Jager is able to set up a typical "fast server" in cooperation with ClariNet Internet Solutions, a high level ISP with excellent equipment and support service.

2.5 Overview diagram



3.0 How it began:

Three elements converged on Australia Day in Eltham, Victoria.

Marjorie, a grandmother (and her cat) fleeing the fires, an Eltham couple that took her in, and the fires' progress as reported by the media and the Fire Authorities.

The Eltham couple, multimedia designer Kim Lynch and his wife Nu, a writer, were able to witness first hand the contradictions between media reports and on the spot reports that came in throughout the day.

The house was like a nerve centre of latest news for Marjorie's' family at Strathewan, who were right in the zone that was under threat from the Kinglake fire, as well as others at St Andrews including screenwriter

Mac Gudgeon, Artist Deb Russell and the actor Rod Mullinar and wife Penny, (an ex councillor of Nillumbik shire, Victoria), who were all right in the path of the fire. Reports also came in from friends in nearby fire prone suburbs.

It was apparent no one knew exactly what was happening that day, and the result was great apprehension and anxiety all round. The idea for a web solution designed for local districts sprang from the events of that day.

The other piece of serendipity was the inclusion in the mix of a touch of the “backyard inventor” and a background of Internet Design in the host, whose twenty four hour focus on the situation allowed the solution to present itself the next day.

4.1 Technical Information: Website Hosting

It would be advantageous to host the system outside the Government network to prevent congestion during state wide emergencies, as witnessed on Australia Day in Victoria.

It would be ideal if the website were to be hosted by a secure, fast server and linked to from the Home page of the Council site, as well as from the fire update pages of the RURAL BRIGADES and Government Websites. This would reduce the load on those sites because people would browse only for a matter of seconds before linking off to their community site.

The Web Servers could be configured and put into “parking mode” until an emergency arises*. This relatively inexpensive service might be donated by a local resident or local business or paid for by council or State Government.

4.2 Technical Information: Online Editor Version 1:

The web based software needed to deliver this information is sophisticated, simple and innovative. The authors of this scheme have many years of unique experience in Web Technology and User

Interface Design, assuring the Web Package will be clear and universally accessible across all platforms, browsers and hardware, including mobile phones.

The map editor interface would be familiar to all who work with graphics programmes on Macintosh and PC. The interface with its small toolbox would also pose no problem for semi professional locals in any district in Australia.

The software development for an online editor could be completed and trialled before next fire season, version 1 being a basic editor and website that has the following features:

- Website as displayed in demo
- Shire Map upload
- Update Latest Alerts (news ticker or drop down news box)
- Editing tools for map symbols: Move, stretch, distort, add + subtract + move nodes (for making irregular shapes) freehand pen.
- Upload facility for map updates
- Secure sign-off facility

4.3 Technical Information: Online Editor Version 2:

An enhanced version could be further developed that works with GIS maps, creates map symbols from database via manual plotter, incorporates zoom, distance measuring tools, live feeds (wind speed, temperature, BOM predictions) The enhanced website could also have filters to view other sorts of information superimposed over the map. For example, infrastructure information from local council database that would assist emergency workers (road conditions, powerlines, water mains, etc.).

4.4 Technical Information: Manual Upload (fallback method)

In case of a glitch in the web server that disables the online tools, an effective backup plan is possible. An updated map in the form of a flat graphic can be uploaded to the website without disrupting the regularity of the updates.

The backup map and symbols are available to the graphic artist on the CD provided as a Photoshop template (a stack of transparent layers) that allow for quick manipulation of the various symbols used over the map. The map is on the bottom layer. The graphic artist will know how to use the template and save the updated map as a web graphic of around 80k.

Photoshop is the industry standard for photographers, designers, printers, students, teachers and artists around the world. In the unlikely event that a graphics novice might need to use the graphics interface during a breakdown there would be included clear, concise help files.

5.0 Firedog

Firedog is a working title. It alludes to the fireman's dog – trusty, helpful, able to sniff out trouble, on the scent, dogged, etc,. Easy to remember. Popular with Australian vernacular- "the dogs"

6.0 Immediate Implementation

The authors of this Plan have the unique expertise and Intellectual Property Rights needed to develop a working prototype

- Version 1: Can be in place, tested and in the public spotlight by Summer.
With Government or Private Sector development funds it would take three to six months to build and test.
- Version 2: Would take much longer to develop, and miss next fire season.
- Fallback: Is ready to implement as an adjunct to Version 1

What started as pure altruism with the first prototype of a community fire alert website has been modified by the information from fire groups and by the realisation that the scale of this strategy would necessitate full time attention to develop, to test and trial and to prepare training courses. The Authors, Kim and Nu Lynch, have been long term locals in fire prone Nillumbik Shire and are Directors of The Reef Multimedia Pty Ltd, one of Melbourne's oldest Web Solution studios

They are the inventors and developers of this plan and bring to it ten years of Web Design and Internet Software experience as well as wireless software for PDA's and Mobile Phones. Their main clients have included major Corporations (WMC) and Government departments (LWA). The emphasis has been on website design solutions, and has demanded a high level of Graphic Design experience in the creation and simulation of interactive maps, diagrams and charts that match the standard of printed material found in annual reports, fact sheets, publications and presentations.

The Reef has had to translate into plain English the setup and operation of internet technology without jargon, to personnel, clients and the public for ten years. The directors of the Reef are in a unique position to develop a state-wide Training Programme and go out to the communities to help establish and train the local groups. The Reef is a small outfit known for its high degree of professionalism and expertise and could apply singular focus to this project..

We welcome comments and expressions of interest in this project.

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