URBAN SERVICES

Department of
Urban Services

Submission to the

Inquiry into the Operational Response to the January Bushfires

2 May 2003

Contents

GLOSSARY

ACTBS	ACT Bushfire Services – an arm of the ACT Emergency Services Bureau that provides services for managing suppression of fire outside the built up area of the ACT. Its operations are managed in accordance with a Rural Fire Control Manual which is prepared by the ACT Bushfire Council.
AFAC	The Australasian Fire Authorities Council is a peak representative body for fire and emergency services and land management agencies in the Australasian region. It was established in 1993. Its members include Australian fire and emergency services and land management agencies and the New Zealand, Papua New Guinea, Singapore and Hong Kong Fire Services. ACT Emergency Services Bureau is a member. This information was gleaned from the AFAC website. The work of this body includes establishment of the Australasian Inter-service Incident Management System – Incident Control System (AIIMS – ICS).
AIIMS	Australasian Inter-service Incident Management System (the management system within which the Incident Control System was developed).
Australian Alps Liaison Committee or AALC	Co-ordinates the management and co-operative research of the Alps across the jurisdictions of Victoria, NSW, the ACT and the Commonwealth. This body aims to address the management of the Alps at the landscape level and develop complementary policies and practices across jurisdictional boundaries. Environment ACT is an active member of the Committee.
Backburn	The process of using fire to fight fire. After fire behaviour is taken into account (with planning assistance) operational firefighters light fires to burn a particular portion of the bush to provide a 'buffer' between the fire front and unburnt areas. This buffer in turn assists suppression efforts.
BFC	ACT Bushfire Council – a body constituted under the *Bushfire Act 1936*. It has statutory power for operational management of fire events, but in practice is an advisory body on fire related matters.
BFMC	ACT Bushfire Fuel Management Committee – responsible for assisting in the process of creating and developing the Bushfire Fuel Management Plan.
BFMP	ACT Bushfire Fuel Management Plan – a Plan that the Department of Urban Services land managers are required to produce pursuant to 1996 amendments to the *Bushfire Act 1936*. The Plan sets out underlying policy and strategic processes and records the implementation programs for

	activities intended to reduce the level of fire fuel.
Brigade Admin Act	ACT *Fire Brigade (Administration) Act 1974.*
Bushfire Act	ACT *Bushfire Act 1936*
CFCO	ACT Chief Fire Control Officer. The office is established under the *Bushfire Act 1936*. This person has operational control over and responsibility for extinguishing and preventing the spread of bushfire in the ACT.
CNP	Canberra Nature Park - includes the majority of the hills and open spaces throughout Canberra.
CSO	Community Service Obligations. That is, services that might be unrelated to the land manager's principal activity, but are important for community amenity or protection.
CUPP	Canberra Urban Parks and Places (a branch within the City Management division of the Department of Urban Services).
DCFCO	Deputy Chief Fire Control Officer. Officers who can be appointed to undertake fire suppression oversight as head of the Service Management Team at the Emergency Services Bureau during a fire event. The Department of Urban Services provides 5 of the 6 DCFCOs. This is not a statutory position, but delegation from the Chief Fire Control Officer.
Direct Attack	This is a fire fighting strategy that involves suppression action right on the edge of the fire. It includes the use of fire tankers and helicopters to direct water onto the fire, and the use of hand equipment (rakes and chainsaws etc) to modify fire behaviour.
DUS	The ACT Department of Urban Services.
EACT	Environment ACT (a division of the Department of Urban Services) - incorporates Parks & Conservation Service and Environment Protection.
EMC	Emergency Management Committee – constituted under the ACT *Emergency Management Act 1999* to provide liaison between relevant agencies related to emergency management.
EP Act	ACT *Environment Protection Act 1997*
EPA	Environment Protection Authority, a branch of Environment ACT
ESB	ACT Emergency Services Bureau (which incorporates ACT Bushfire Service, ACT Fire Brigade, ACT Ambulance Service and ACT Emergency Service). This is a division within the ACT Department of Justice and Community Safety.
Fire Tower	There are 4 purpose built towers located outside the urban areas of the ACT. Fire observers are required to physically remain in those towers, looking out for fire, during standby periods in the prescribed fire season each year. Personnel for two of those fire towers have been provided under

	contract for many years by ACT Forests. For the past 2 years, those personnel have been provided through sub-contractors.
Forests Brigade	An operational fire brigade for fighting bushfires in the ACT. Personnel for this brigade are drawn from ACT Forests.
Fuel	Material that will burn. Relevant to this submission, it will encompass grass, litter, leaves, small twigs, bark, bushes, logs, trees etc – anything on the land which is likely to burn and contribute to the spread of fire.
Fuel Management Units or FMUs	A method used for division of the ACT into specified areas for the purpose of assessment of the risk each area poses for fire hazard – the concept has been developed and used in the 2002/04 Bushfire Fuel Management Plan.
Glenn Taskforce	During 1995 the ACT Government commissioned a report from a taskforce chaired by Graham Glenn, dealing specifically with issues surrounding bushfire fuel management. The report of the Taskforce underpinned some significant changes to fuel management in the ACT, including 1996 amendments to the Bushfire Act.
Group Officer	An experienced fire officer with specialised training. May supervise firefighting by a number of crews on the fireground and may be appointed in the role of Incident Controller.
Incident Control System or ICS	A command structure to systematically and logically manage suppression of emergency incidents. The system provides for the incident controller at the top of the structure, with officers managing branches which provide planning, operations and logistics services. The Australasian Inter-service Incident Management System – Incident Control System is used by a range of agencies around Australia to manage emergency events, large and small. The method was adapted from the National Inter-Agency Incident Management System (NIIMS) used in the USA. Implementation of the system throughout Australia has been promoted by the Australasian Fire Authorities Council.
Incident Controller	The person responsible for the management of all incident operations. This is the definition used by the Australasian Fire Authorities Council.
Incident Management Team or IMT	A group of personnel comprising the Incident Controller, and the personnel that person appoints to be responsible for operations, planning and logistics.

Indirect Attack	A firefighting method that involves using backburning and containment lines (roads, tracks, firebreaks) to confine the fire within boundaries determined through analysis of the fire.
JACS	The ACT Department of Justice & Community Safety – The ACT Emergency Services Bureau is a division within this Department.
Land Act	ACT *Land (Planning & Environment) Act 1991*
LG	Land Group (a branch of the Department of Urban Services)
Light Unit	A smaller pump / tank for carrying water and other equipment for fire fighting. May be slipped onto an open tray 4WD vehicle.
LMA / LMAs	Land management agency(s) – there are 4 Department of Urban Services agencies with responsibility for managing ACT Government land. They are Environment ACT, ACT Forests, Canberra Urban Parks & Places and Land Group.
LMFLG	Land Managers Fire Liaison Group (liaison on fire matters between the Department of Urban Services land managers and relevant persons from the ACT Emergency Services Bureau)
MOU	Memorandum of Understanding – refers to the agreement between Department of Urban Services land management agencies and the ACT Bushfire Service for provision of personnel and other resources to assist the Emergency Services Bureau in providing a fire suppression service in the ACT. The Memorandum of Understanding is prepared annually for the purpose of meeting the individual requirements of the particular fire season ahead. The document incorporates information about the requirements for land managers to provide staff who are 'fire-ready' and on certain levels of standby. The document also specifies the resources each land manager will provide to ESB to actually suppress fires when required. Other ancillary matters are incorporated into the document.
MRC	Murrumbidgee River Corridor (land managed by Environment ACT)
NCA	ACT *Nature Conservation Act 1980*
NNP	Namadgi National Park
PALM	Planning and Land Management (a division of the Department of Urban Services).
Parks Brigade	An operational fire brigade for fighting bushfires in the ACT. Personnel for this brigade are drawn from Environment ACT (mainly through their Parks & Conservation Branch) and CUPP (via a service level agreement with Cityscape Services, a business unit of the City Operations Division of the Department Urban Services).
Prescribed burn / hazard	A technique used to manage fuel levels in specified land areas by burning the areas concerned in order to reduce,

reduction burn	on a broad scale, the amount of fuel available to burn. A fire is lit under controlled conditions with a view to filling pre-determined requirements for the time, intensity and rate of spread of the burn. Such a technique is intended to both slow the speed and reduce the intensity of a subsequent fire. It is a controversial means of achieving broad area reduced fire hazard. The controversy mostly surrounds the ecological effects of undertaking such a burning regime as a means of reducing fire hazard. There are polarised scientific views on the usefulness of the strategy.
RAFT	Remote Area Firefighting Team – any fire that requires people to be self-sufficient, and away from their vehicle for the full shift is classed as a remote area fire.
Senior Fire Officer	Deputy Chief Fire Control Officers and Group Officers appointed by the Bushfire Council pursuant to the Rural Firefighting Manual.
Service Management Team or SMT	A group of senior officers within the Emergency Services Bureau who manage the response to fire events in the ACT. The Emergency Services Bureau staff may be supplemented with staff from Department of Urban Services land managers, upon request by the Emergency Services Bureau, during a fire event. This is not a statutory body.
Suppression	Extinguishing a fire.
Tanker	A large fire truck, equipped to deal with significant fire events. Has generally had a 6000 litre capacity for carrying water, and also carries other equipment.
TNR	Tidbinbilla Nature Reserve

Chapter One

INTRODUCTION

A. Overview

The purpose of this submission is to provide information to the Inquiry about the structure of the Department of Urban Services (DUS), the legislative base in relation to fire issues, the approach of DUS to public land management, and the role of DUS in and its preparedness for fire combat, with a particular focus on January 2003. At the conclusion of the report we make comments and recommendations about opportunities for learning and improvement.

We are providing this submission in an environment of exceptional circumstances. The combination of drought and the dry thunderstorms of January 8 created an extreme situation, which stretched to the limit the resources and skills of the ACT and the much larger jurisdictions of NSW and Victoria, notwithstanding that both States have substantial dedicated fire combat resources.

The Department is responsible for management of well over 50% of the land area of the ACT and seeks to achieve an appropriate balance between sometimes competing objectives for this land. Some two to three years ago, in the spirit of continuous improvement, the desirability of improving on previous Bushfire Fuel Management Plans was recognised and reflected in the 2002-2004 Fuel Management Plan. It is the preliminary view of the Department (based on available scientific information and practical experience, and taking into account the relevant land uses) that this Plan continues to be appropriate in relation to fuel management. We also note that further work has commenced in relation to access tracks in the Namadgi National Park. However, it may be that the various inquiries now underway will suggest or recommend more intensive measures. The Department is committed to implementing any such measures which the Government decides to adopt.

A large number of staff from the Department of Urban Services were deeply involved in the response to the January 2003 fires, including direct combat, a wide range of support roles and in the post-fire recovery process. Furthermore, some 23 Departmental staff lost their houses as a result of the fires, and the nature of the future work for many staff has been severely affected by the fires, notably those staff involved with Parks and Conservation, and ACT Forest management.

General feedback obtained from DUS staff during the preparation of this submission is that they deeply appreciated the contribution and cooperation

of many groups involved in the fire response, including the rural volunteer brigades, urban fire brigade, interstate combat units, Commonwealth Government agencies, (including the Defence Forces and the AFP), and many others. Of particular note was the effort over many days from the staff of the Department of Justice and Community Safety, especially those who are part of the Emergency Service Bureau; many of these people worked for very long hours, continuously from 8 January through until near the end of January 2003.

Looking to the future, the general view of DUS staff is that they wish to continue the cooperative relationships experienced during the combat period, but they also consider that there are opportunities for learning and improvement, and in this context Chapter 4 of this submission has been developed.

The contents of Chapter 4 has been prepared on the basis of information available to DUS management. Our intent has been to provide suggestions in a positive way, focussing on "moving forward". We trust that our proposals will be carefully considered by the inquiry, with resultant improvements to the operational capacity of the ACT to prepare for and/or respond to major future emergencies, again with a spirit of cooperation between emergency response agencies.

B. Legislation and Organisation

Following is an outline of the functional responsibilities of the agencies involved in, and the legislation which governs, fire management in the ACT.

Emergency Management

Management of a fire emergency in the ACT is effected through a combination of statutory and administrative bodies. The *Bushfire Act 1936* establishes offices and bodies relevant to rural fire-fighting. The *Fire Brigade Act 1957,* and *Fire Brigade (Administration) Act 1974* establish offices and bodies relevant to urban fire-fighting.

The *Emergency Management Act 1999* establishes the ACT Emergency Service and the office of Director of the Service. It also sets out procedures for declaration of, and chain of command details for, a "State of Emergency". An Emergency Management Committee (EMC) is also established by the *Emergency Management Act 1999*. The EMC consists of heads of bodies relevant to emergency situations and the function of the EMC is to provide liaison between relevant bodies and people.

In 1995 the ACT Emergency Services Bureau (ESB) was established. ESB provides services for response to the entire range of emergencies occurring within the ACT and is currently part of the Department of Justice and

Community Safety. ESB incorporates the ACT Bushfire Service, ACT Fire Brigade, ACT Ambulance Service and ACT Emergency Services. The Executive Director of ACT Emergency Services (appointed pursuant to section 46 of the *Emergency Management Act 1999*) is, in practice, also the Executive Director of ESB appointed pursuant to section 4 of the same Act .

The *Bushfire Act 1936* establishes the ACT Bushfire Council, a Chief Fire Control Officer and a Rural Fire Service. They have responsibility to prevent or control the outbreak or spread of fire outside of the urban area. The Rural Fire Service is now known as the ACT Bushfire Service It consists of fire control officers and bushfire brigades, whose activities are controlled in accordance with a Rural Fire Control Manual prepared by the ACT Bushfire Council.

The ACT does not have a dedicated full-time rural fire-fighting force. Many of the officers and each of the bushfire brigades that form the ACT Bushfire Service are sourced from outside the Emergency Services Bureau. A number of DUS personnel have been appointed as fire control officers, and two Brigades are established utilising DUS personnel.

Department of Urban Services

The Department of Urban Services ('DUS' or 'the Department') plans, develops and ensures delivery of a range of state and municipal services for the people of the ACT.

Urban Services' vision statement, 'Making Canberra an even better place', encapsulates the Department's philosophy for delivering quality outcomes, and reflects what we aspire to achieve.

The Department develops policy and legislation, and provides advice to the ACT Government on municipal services, land use planning, environmental issues, transport strategies, and arts and cultural services. It also commissions the delivery of major urban infrastructure and maintenance services including roads, streetlights, stormwater, waste management, sportsgrounds, and urban open space, National parks and reserves.

The Department delivers a range of services to the Government and the community including: motor vehicle registration and licensing; horticultural and cleaning services; public cemeteries; parking, domestic animal and city rangers; urban wildlife; Canberra Connect (including shop-fronts, call centre and website); libraries; publishing services; Yarralumla Nursery; commercial forestry; rural extension services; land sales; property management and environmental management.

The Department also acts as a regulator, ensuring compliance standards are maintained in relation to construction trade licensing; land development and construction; the natural, cultural and built heritage; pollution control;

environment protection; public transport; road user safety; and parking control.

To assist the Government in its role as an owner of assets, DUS provides advice on the longer-term implications of planning, developing, managing and maintaining ACT urban infrastructure assets.

The diagram at Annexure 1 illustrates the structure and different service agencies through which the Department delivered the services mentioned above as at January 2003.

Land Management Responsibilities

The Department is responsible for managing the majority of the land area of the Territory, including areas managed for conservation and heritage values (managed by Environment ACT and ACT Forests), commercial forestry (managed by ACT Forests), land release (managed by Land Group), recreational use (managed by Environment ACT, ACT Forests and Canberra Urban Parks and Places) and infrastructure (managed by Roads ACT). In addition, the Land Group also acts as the land manager for unleased or unreserved Territory land.

The various land management agencies within DUS are referred to within this document as LMAs.

Roles of Relevant DUS Agencies

Environment ACT

Environment ACT (EACT) is responsible for overseeing the management of the ACT's natural and cultural assets. This includes managing Namadgi National Park, Tidbinbilla Nature Reserve, Canberra Nature Park and other nature reserves which account for 53% of the land area of the Territory; conserving biodiversity on this and other land; maintaining environmental quality of air, land and water; animal welfare and managing and protecting the Territory's heritage assets. EACT also fulfills the role of supporting rural lessees with respect to primary industry issues.

EACT is divided into a number of business units which undertake the activities of the division. ACT Parks and Conservation Service is responsible for the ACT reserve system, comprising areas of Wilderness, National Park, Nature Reserve, Special Purpose Reserve and rural lands. Specific areas managed are:

- The East District, which includes Canberra Nature Park and Googong Foreshores and rural lands located east of the Murrumbidgee River;
- The West District, which includes Namadgi National Park and the Murrumbidgee River Corridor and rural lands located west of the Murrumbidgee River; and
- The Tidbinbilla District, which includes the Tidbinbilla Nature Reserve.

An important land area, so far as this submission is concerned, is Namadgi National Park. It is the largest single land management unit in the ACT, being approximately 106,000 hectares and comprising 43% of the ACT. The Park has significant environmental, hydrological, historical and recreational value to the ACT.

A further role undertaken by the head of EACT is that of Conservator of Fauna and Flora. This is a statutory position established by the *Nature Conservation Act 1980* with further statutory responsibilities under the *Land (Planning and Environment) Act 1991* and the *Tree Protection (Interim Scheme) Act 2001*.

EACT incorporates the Environment Protection Authority (EPA), which is a statutory position established by the *Environment Protection Act 1997*. The EPA is also responsible for the *Water Resources Act 1998*.

EACT provides fire-fighting staff to the ACT Emergency Services Bureau as part of the Parks Brigade.

ACT Forests

ACT Forests is a semi autonomous business unit within the City Management Group of the Department of Urban Services. It operates in a similar fashion to a Public Trading Enterprise. Its log sale revenue is used to fund the ongoing plantation establishment, tending and maintenance programs and about half of the fire management program. Last year ACT Forests returned a profit to the Territory of $3.945 million. It also receives an annual appropriation from Government for the provision of a range of community service obligations, including recreation management, weed control and part of the fire management function.

The staff are organised into business units, each of which is headed by a Manager reporting to the ACT Forests Director. Many of ACT Forests' operations, such as timber harvesting and most plantation management operations, are carried out by contractors. Some of these contractors use heavy plant such as bulldozers, which can be made available to assist with fire suppression operations.

ACT Forests is a land manager responsible for approximately 10% of the ACT (26,000ha) including the commercial pine estate of 16,200 ha. About 10,000 ha is native forest woodland and grasslands which is managed for conservation values. The plantations are predominantly *P. radiata* with smaller areas of *P. ponderosa* and other species including *Eucalyptus.* The commercial plantations of *P. radiata* are grown on an average cycle of 32 years and most plantations in the ACT are now on their second rotation. These plantations managed by ACT Forests are an important and significant part of the ACT landscape and economy and provide most of the raw materials for the local forest industry.

ACT Forests provides firefighting staff to the ACT Emergency Services Bureau through the Forests Brigade. The January 2003 fire will result in the loss of most of ACT Forests' commercial revenue stream and hence its capacity to fund fire and forestry management programs.

Canberra Urban Parks and Places

Canberra Urban Parks and Places (CUPP) is responsible for the the management of all urban open spaces (parks, ovals, verges etc). This includes horticultural maintenance and cleaning, mowing and all other management activites for urban open space.

CUPP manages the task of mowing 4100 hectares of grass, and other maintenance tasks, through three services providers, Canberra Horticultural Maintenance, Cityscape Services and Spotless.

Grassed areas are mown to maintain public safety, provide community access and to assist with fire fuel reduction.

Cityscape Services, a business unit within the City Operations division of DUS, provide firefighting staff to the ACT Emergency Services Bureau on behalf of CUPP pursuant to a service level agreement. The staff form part of the Parks Brigade.

Land Group

Land Group (LG) is responsible for the strategic release and development of unleased ACT Government land, ensuring sustainable use and best return to the community. LG is thus directly responsible for the environmental management of vacant unleased land under a range of land use policies, being predominantly land which is in a transition phase towards development and sale. In February 2002, LG became the land manager for unleased and unreserved Territory land which does not formally belong to any other ACT Government land manager, regardless of its land use policy. LG remains responsible for this land pending its transfer to the appropriate land manager.

Roads

Roads ACT is responsible for the construction, maintenance and asset management of the territorial and municipal roads, national highways, community paths, driveways, the municipal stormwater system, bridges, carpark facilities, traffic and streetlights. It is also responsible for roadside fixtures such as signs and guideposts and for line-marking.

In rural areas, Roads ACT is responsible for both sealed and unsealed roads. On sealed roads it is responsible for the pavements and the road verges to the back of the roadside drainage. This includes mowing grass, weed

spraying, removal of saplings and collection of litter. On unsealed roads the major activity undertaken is the grading of the road.

The Director of Roads ACT is a statutory appointment to the ACT Emergency Management Committee and serves as Infrastructure Recovery Coordinator.

Planning and Land Management (PALM)

Planning in the ACT is the responsibility of both the ACT and Commonwealth Governments. The overarching planning policies are contained in the National Capital Plan, administered by the Commonwealth's National Capital Authority, and the ACT's Territory Plan, administered by PALM.

In addition to the administration and maintenance of the Territory Plan, PALM is responsible for the administration of the *Land (Planning and Environment) Act 1991* (the Land Act). Both the Land Act and the Territory Plan provide mechanisms for the consideration and management of bushfire threat, from the initial stages of identifying land capability for potential urban development, to the ongoing management of public land and rural leases at the urban interface. PALM is also responsible for administering lease compliance, which can have fire management implications where those leases are rural, or at the urban edge interface.

The Land Act came into effect in April 1992, and the first Territory Plan was finalized in 1993. Further detail concerning the historical development of the management framework for planning in the ACT is provided in Annexure 2. During December 2002 the ACT Assembly passed the *Planning and Land Act 2002* (the Planning Act) which establishes the ACT Planning and Land Authority, Planning and Land Council and Land Development Agency. The Act commences on 1 July 2003. The new Authority will have operational responsibility for Territory planning and the planning management framework enables impartial advice and services to be provided to the Territory.

Canberra Connect

Canberra Connect is an ACT Government initiative enabling the community and businesses to deal with Government through a 'single point' of access which offers three main channels – a shopfront service, a call centre, and a major interactive website.

The ability to transform the Canberra Connect call centre into an Emergency Information Centre (EIC) had been developed during 2002, and agreed in principle by the ACT Information Management Board in December 2002. At that meeting the role Canberra Connect might play in any emergency was discussed as being additional to existing emergency plans. The Chief Executive subsequently formally approved the arrangement after planning was undertaken for the provision of a service 24 hours per day, 7 days per week during emergency events.

The purpose of establishing this capability was to provide support to the community through the provision of information and advice, and to assist the ACT Emergency Services Bureau (ESB) by freeing up personnel to focus their efforts on core emergency activities. The procedures were agreed with ESB and were to be enacted at the direction of the Executive Director, ESB. The operation of the Emergency Information Centre was premised on information being provided to the call centre by ESB.

Legislation

The Bushfire Act (1936) (Bushfire Act)

The Bushfire Act governs bushfire control. Relevant matters arising from the Bushfire Act for DUS LMAs include:

1. The Bushfire Act establishes a Bushfire Council (BFC), which may take such action as is necessary to prevent or control the outbreak or spread of fire (see section 5H of the Bushfire Act). The BFC operates as an advisory body. It is discussed in greater detail in Chapter 2.

2. The BFC appoints the Chief Fire Control Officer (CFCO) who is responsible for extinguishing or preventing the spread of fires in the ACT outside the "Built Up Area". Thus, section 5N of the Bushfire Act provides for the CFCO to be responsible for, and hold control over, suppression of fire on land managed by the LMAs.

3. Amendments to the Bushfire Act, which commenced operation in 1996, incorporated into the Act a requirement that each LMA produce a Bushfire Fuel Management Plan (BFMP) and submit it to the Minister for approval on a biennial basis. The Plan establishes a framework of bushfire fuel management strategies, identifies required actions and sets minimum standards for LMAs. The BFMP will be referred to in more detail later within the submission.

4. Rural lessees are not required to produce a BFMP, and neither does the requirement apply to Commonwealth land (section 11 of the Bushfire Act).

5. Through the ACT Bushfire Service (ACT BS), the ACT Emergency Services Bureau is responsible for the production of the Rural Fire Control Manual. The Manual details all aspects of the operation and organisation of the ACT BS, the powers and duties of officers, brigade members and emergency volunteers, standards for recruitment and training and equipment and communication specifications (section 5KA of the Bushfire Act). The Manual was prepared in 1992 by ACT BS.

6. The Bushfire Act stipulates that any person who leaves unattended a fire that he/she has lit, used or maintained in the open is liable to prosecution (section 9 of the Bushfire Act).

7. A permit to burn is required for the lighting of outdoor fires (eg: prescribed burns) during the declared bushfire season.

The Fire Brigade Act 1957 (Brigade Act)

Fires in urban Canberra are controlled in accordance with the Brigade Act and the *Fire Brigade (Administration) Act 1974* (Brigade Admin Act). The Brigade Admin Act appoints a Fire Commissioner, whose responsibility it is to control and manage the Fire Brigade.

Land (Planning and Environment) Act 1991 (Land Act)

The Land Act provides for the Territory Plan, which is administered by PALM. The Land Act and Territory Plan underpin PALM's responsibilities for taking account of fire hazard during planning and development.

The Land Act provides that a Land Management Plan is required for areas declared as Public Lands. There are eight categories of Public land, including wilderness, national park, nature reserves, and urban open space. A Land Management Plan is to be prepared to promote the relevant management objectives for areas reserved as Public Land, and those objectives are set out in a Schedule to the Land Act. Bushfire Fuel Management Plans must be prepared taking account of the Land Management Plan for a particular area, and has no effect if it is contrary to a Land Management Plan under the Land Act.

Nature Conservation Act 1980 and *Environmental Protection Act 1997*

In the context of this submission the *Nature Conservation Act 1980* (Conservation Act) and *Environment Protection Act 1997* (Environment Act) are most relevant for LMAs with respect to approvals and permits for works to be undertaken.

ACT Forests can only perform its forestry harvesting functions, and all LMAs may only undertake prescribed burning, after receiving an environmental authorisation pursuant to Section 42 of the Environment Act. The approval process in place under Part 8 of that Act is discussed in Chapter 2.

Section 6 of the Environment Act provides for the Act not to apply for the purpose of actions required to extinguish or prevent the spread of fire under the Bushfire Act and the Brigade Act.

Pursuant to section 6, the Conservation Act has effect subject to the responsibilities provided for under the Bushfires Act.

The Environment Act and the Conservation Act include important responsibilities for EACT regarding plant and, together with the *Animal*

Welfare Act 1992, animal management in the ACT. This includes responsibilities for injured animals, which became important during the January 2003 fire.

Forest Code

All ACT Forests operations are required to comply with the principles contained in the ACT Code of Forest Practices, which was developed by ACT Forests in 1995. At that time it was generally accepted that all forest industries should have a Code that sets out the best practice for all forest operations, including relevant Occupational Health and Safety and environmental concerns. ACT Forests examined numerous other codes to develop a suitable arrangement for the ACT. In 1999, under a National directive, all the States and Territories reviewed their Codes of Practice. This analysis was undertaken by the CSIRO and had to be signed-off before any state could export timber. The ACT Code was accepted with a number of minor amendments.

Chapter 2

PREPAREDNESS

A. Introduction

Historically, planning in the ACT has focussed on the integration of urban design into the natural environment. This has resulted in the 'bush capital" being an environment that distinguishes Canberra from other cities in Australia. It is one of the elements strongly valued by the community. This naturally presents challenges in the urban edge interface in relation to bushfire management, though not to the extent experienced in areas such as the Blue Mountains or the Dandenong Ranges. Urban Edge Design principles take into account the management of bush fire risk. Separation edge roads and landscape design restrictions are tools commonly used for achieving an urban edge which preserves the seamless integration of the built and natural environment, while reducing the bush fire hazard risk for the community. Consideration of the range of risks and management tools is undertaken at the early planning stages for new urban edge development, and these considerations can sometimes result in the modification of a proposed urban edge following fire risk assessment. Annexure 3 provides a more detailed explanation of the planning and development process in the ACT.

The process described above, which underpins development in the ACT, provides the platform for planning and implementation of fire management.

The broad framework for management of bushfires in the ACT can be summarised as follows:

1. Bushfire fuel management planning and implementation (to manage fuel loads and consider the threats presented by potential fires), in an effort to improve the effectiveness of fire suppression activities when they are required;
2. Pre-suppression planning, providing adequate infrastructure and resources for fire suppression, and providing the systems and processes by which suppression efforts are directed;
3. Public awareness and education of fire issues; and
4. Suppression activities.

The Bushfire Act provides for a unique arrangement in the ACT as compared with fire management in other Australian jurisdictions. In relation to the first activity above, while responsibility for fuel management planning is shared between ESB and the Department's land management agencies (LMAs), responsibility for implementation of fuel management lies wholly with LMAs; there is dual responsibility on the part of the ACT Emergency Services

Bureau ('ESB') and LMAs for the second and third activities; and control of the final activity rests with ESB, although it is carried out with the help of resources from this Department. This arrangement is discussed in Chapter 4.

There are several bodies and groups which contribute to the range of fire management activities in the ACT, outlined below.

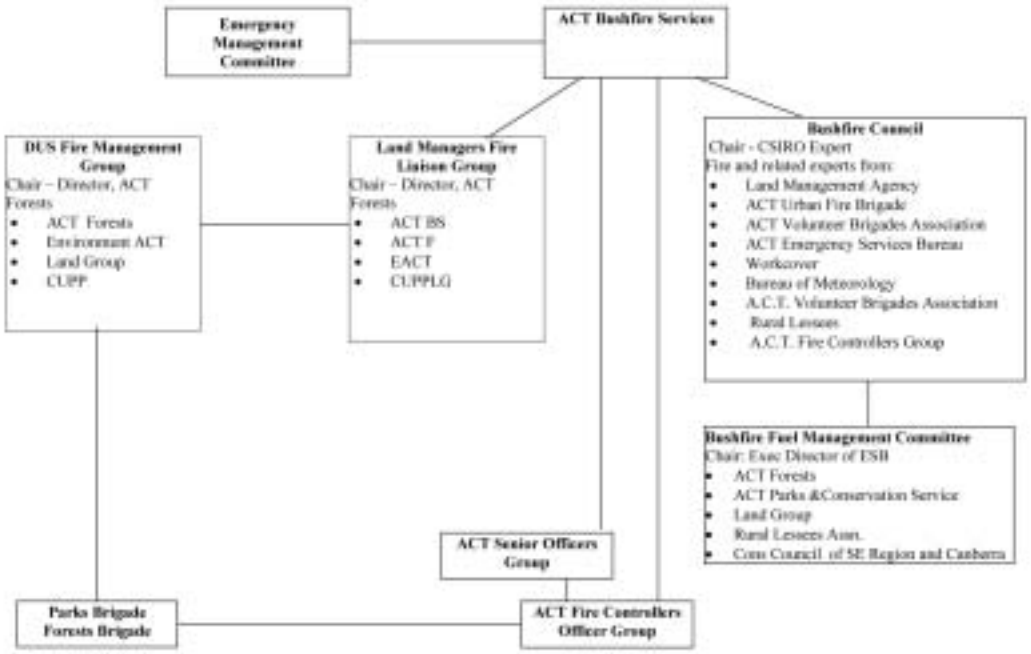
B. Structures for fire management

There are nine main groups which are part of, or liaise with, DUS for fire management, planning and suppression in the ACT. These are the following interdepartmental and DUS internal bodies:

- ESB – ACT Bushfire Service
- Bushfire Council
- ACT Emergency Management Committee
- Bushfire Fuel Management Committee
- ACT BS Fire Controllers Group
- ACT BS Senior Officer Group
- DUS Fire Managers Group
- Land Managers Fire Liaison Group
- Departmental Brigades (Parks and Forests)

Set out below is a diagram showing the various bodies, but focussing on DUS, and the way in which they communicate.

Figure 1 . Existing Communication Arrangements for fire suppression, preparedness and Fuel Management between ESB and DUS



In addition, the Department participates in intergovernmental fora on fire management – these are also outlined below. As will be gleaned from this outline, the 'structural framework' for fire management is complicated. While the various groups and committees have evolved over time to meet perceived needs, the overall arrangement is characterised to some extent by lack of formal cross-linkages as well as areas of duplication. This is discussed further in Chapter 4.

(a) Interdepartmental Structures

ACT Bushfire Service (ACT BS)

The primary role of the ACT BS, which is part of ESB, is suppression of fires outside the "Built Up Area" in the ACT. ACT BS also provides for the co-ordination of fire preparedness in the ACT. The Bushfire Act provides for the office of Chief Fire Control Officer (currently also the Director of ACT BS) with the responsibilities for fire suppression and prevention of spread of bushfire. This is achieved primarily by a combination of volunteer brigades, urban brigades, DUS brigades and senior operational officers within ESB. The CFCO reports to the Executive Director of the ESB.

Communication between the LMAs and the CFCO is effected through the Land Managers' Fire Liaison Group (LMFLG) referred to below.

Bushfire Council (BFC)

The Bushfire Act provides for the appointment of the Bushfire Council which may take such action necessary to prevent or control the outbreak or spread of fire and to protect any part of the ACT from the outbreak and spread of fire. (section 5H *Bushfire Act*). Despite the operational nature of the role of this body described in the *Bushfire Act*, in practice the BFC operates purely as an advisory body. It currently has a membership of 12 who are appointed by the Minister for Justice and Community Services (JACS), based on their experience in fire management. DUS employees who are currently members of the BFC include the Director, ACT Forests and the Bushfire Officer, Cityscape Services. The Council undertakes formal authorisation for bushfire brigade appointments, provides advisory assistance in drafting of fire planning documents and undertakes projects for reviewing and improving ACT fire planning and suppression.

Emergency Management Committee (EMC)

The Emergency Management Committee of the ACT is constituted by the *Emergency Management Act 1999, Division 2.2.* The primary

function of the EMC is to liaise between relevant agencies, organisations and other persons in relation to emergency management.

The EMC seeks to enhance emergency management capabilities, reduce community vulnerability to the effects of emergencies and improve awareness and training to deal with emergency management matters.

The EMC meets on a monthly basis or at such times as required. It is chaired by the Chief Police Officer of the ACT and has representatives from a number of key agencies, including ESB, DUS, Workcover, and Health. There are several sub-committees of EMC which provide specified services, including Community Recovery, Infrastructure Recovery and Hazardous Materials.

The Director of Roads ACT and the Executive Director EACT are both members of the EMC.

The Bushfire Fuel Management Committee (BFMC)

The Bushfire Fuel Management Committee is chaired by the Executive Director of ESB, and its members include representatives from the LMAs, Rural Lessees' Association and the Conservation Council.

The BFMC currently oversees the fuel management planning process in the ACT, working closely with the LMAs. It has been active in undertaking reviews of the planning framework and obtaining independent audit to provide for continual development of the plan.

Land Managers Fire Liaison Group

The LMFLG is an interdepartmental group established to enable information exchange between DUS and ESB.

The Director of ACT Forests is the Chair of the LMFLG, which includes representatives from the DUS Fire Management Group, the Chief Fire Control Officer, Operations Officer of the ACT BS and an Urban Fire Brigade Representative. The Group meets monthly, one week after the DUS Fire Managers Group.

While the LMFLG considers matters raised at the DUS Fire Management Group, more comprehensive attention tends to be given to issues relating to the ACT BS, with an emphasis upon fire suppression and pre suppression activities.

Effective operational co-ordination has been achieved through this forum and appreciation of land management and emergency services

issues has been developed. This is demonstrated in the continuing joint role of the agencies and ESB in pre suppression planning, training, development of an annual Memorandum of Understanding, suppression activities, and inclusion of LMA personnel as group officers within ACT BS.

ACT Senior Officer Group (SOG)

The Senior Officer Group is made up of the Chief Fire Control Officer, Deputy Chief Fire Control Officers, and Group Officers (8 people in all). The roles of these officers and how they fit into the operational structure for firefighting will be discussed under Personnel, below. The Group meets to discuss operational issues surrounding fire suppression within the ACT BS. There are five DUS personnel appointed as Senior Officers.

ACT Fire Controllers Officer Group

The Fire Controllers Group was formed some years ago by the Brigade Officers (bushfire brigade Captains & Deputy Captains from both Parks and Forests brigades and the volunteer brigades) to provide a forum for discussion of issues between the Brigade Officers. The Group meets every 6 weeks, and raises matters of importance with the BFC for consideration. The meetings are attended by the CFCO, which provides a link to ACT BS.

(b) DUS Internal Structures

DUS Fire Management Group

Coordination of (primarily operational) fire related matters between land managers is undertaken by the DUS Fire Management Group. It brings together senior fire managers who represent the four LMAs within DUS (ACT Forests, CUPP, EACT and Land Group). The Fire Management Group meets monthly.

Key functions of the DUS Fire Management Group relate to:

- Fire Prevention and Fuel Management – co-ordinating the development of the Bushfire Fuel Management Plan and its implementation by LMAs, and reporting thereon.
- Fire Pre-suppression - Co-ordinating, scheduling and delivering training and pre season activities; co-ordinating fitness assessments; rostering standby arrangements and allocating resources; developing the Memorandum of Understanding between DUS and ESB and Standard Operating Procedures; and developing equipment requirements and standards.
- Co-ordinating fire suppression related activities including:
  - Response and resource allocation to fires;

- Structural arrangements on the fire ground;
- Debrief and continual improvement.

This forum has achieved ongoing and effective liaison between DUS LMAs. This is demonstrated in the pre-season exercises held jointly by the agencies for pre-season fire refresher training, fitness assessment and Remote Area Fire Team (RAFT) training. Other co-operative outcomes were the 2002 revision of the BFMP which incorporated a collaborative approach to Fuel Management Planning between ACT LMAs.

ACT BS - Departmental Brigades

DUS provides staff to ESB to facilitate fire suppression activities. Two DUS Brigades exist. They are:

- Forest Brigade consisting of 24 staff from ACT Forests; and
- Parks Brigade consisting of approximately 90 staff from EACT (primarily Parks and Conservation Service) and CUPP (whose fire suppression staff are provided by Cityscape pursuant a service level agreement).

Links between the Brigades and the DUS Fire Management Group are achieved in two ways:

- At a formal level, by regular meetings of the Brigade Officers, attended by representatives of the Fire Management Group.
- On an informal but effective level, through the close day to day liaison of the Brigade officers with the members of the Fire Management Group from the respective LMAs, in issues both fire related and non fire related.

(c) Intergovernmental Structures

National Forest Fire Management Group

ACT Forests is a member of the national Forest Fire Management Group. The group is a subcommittee of the Primary Industry Ministerial Council's Forestry and Forest Products Committee. It comprises forest fire experts from across Australia and meets twice a year. National and international forest fire policy issues are examined by this group. Policy recommendations are made which affect forest fire practices undertaken by all forest fire agencies within Australia. The Group was the driving force behind the recent establishment of an international agreement to cover the exchange of forest fire fighters between the USA and Australia.

Australian Alps Liaison Committee

EACT has a representative on the Australian Alps Liaison committee, which provides for the co-operative management of the Australian Alps, in conjunction with NSW National Parks & Wildlife Service, and the Victorian Department of Sustainability and the Environment. This is an important body for effective cross-border development of policy for the very significant Alps areas burnt in the January 2003 fires. It can foster inter-jurisdictional consideration of future policy directions for the balancing of important environmental values, conservation, public enjoyment of the land, and the management of assets within the Alps, affecting fire management in those areas and adjoining lands.

Interstate Standing Committees

EACT's Executive Director represents the ACT Government on the Primary Industry Standing Committee, and deputises for the DUS Chief Executive Officer on the Natural Resource Standing Committee which support their respective Ministerial Councils. EACT's Director, Environment Protection, represents the ACT Government on Environmental Protection and the Heritage Council Standing Committee. These bodies consider the co-operative management and policy development for a range of natural resource, environment and heritage management issues at a Federal-State level.

C. Fuel Management and Forest Access

Management of the land controlled by DUS LMAs includes responsibility for implementing appropriate fire avoidance strategies and preparation for fire events. This includes fire fuel management and forest access.

Overarching Framework for Fuel Management and Forest Access

Consistent with the Glenn Taskforce report of 1995, the approach of DUS and its agencies towards fire fuel management over recent years can be summarised as:

- Highest priority to hazard reduction and bushfire safety to protect people and property.
- An understanding of the broad geography of the ACT where the principal continuously forested areas are separated from most urban settlements by a broad strip of largely cleared farmland, which provides opportunities for fire containment/suppression at the forest boundary.
- The initial planning of the ACT has resulted in a situation where "development", both urban and rural is generally on the valley floors, with vegetated ridges in between. This significantly assists in fire

suppression in “normal” fire seasons (such as for the Christmas 2001 fires).

- A strong nature conservation interest by many in the ACT community leading to concerns about:
  - The perceived adverse effects of fuel reduction measures on biodiversity and / or rare and endangered species;
  - Construction and / or maintenance of trails and fire control lines through areas of designated or perceived wilderness.
- The early response capability over recent years (including ground attack and aerial attack) which has suppressed many fires before significant spread.
- Recognition that fuel reduction through burning can only occur on a limited number of days each year, (generally in Autumn), when conditions are optimum. Even in the best and safest conditions there are likely to be community concerns about smoke, air pollution and possible asthma problems. Furthermore, there is an elaborate regulatory and consultative process required for each burn.

The end result of this approach has been to focus fuel reduction measures primarily in areas adjacent to urban development, including:

- ACT Forests land;
- Canberra Nature Park hills and ridges; and
- Canberra Urban Parks land, including along urban stream lines.

Good quality vehicle access is also generally available through these areas.

In contrast, areas more remote from settlements (notably in Namadgi National Park) have been managed primarily for their water catchment, conservation and low impact recreation values. These values also lead to high quality water and maximum water yield in the Cotter River catchment (except in extreme circumstances such as those of January 2003).

The Department considers that this approach has been broadly in line with community expectations (and available budgets). We also note that our own internal analysis in the aftermath of the Christmas 2001 fires (including emerging drought conditions) led to the Department significantly increasing our immediate “urban fringe” safety measures in the first half of 2002.

The approach to bushfire planning and management in the ACT has proved effective for ‘normal’ summer circumstances. However, the circumstances that led to the January 2003 fires were extraordinary. The risks posed by exceptional fire events can never be entirely avoided. The results of past devastating fires across Australia highlight the difficulties faced by those responsible for fire management. The 2002-2004 Bushfire Fuel Management Plan was prepared as part of the process for continuous improvement in fire planning and management in the ACT. This document was influenced by lessons from the Christmas 2001 fire, community comment and fire expertise available from both external and internal sources. Drafting of the Plan

commenced in 2001 and was completed (as a document) in November 2002. However it had not been fully implemented “on the ground” before the January 2003 fires.

The preliminary view of the Department is that the provisions of the Bushfire Fuel Management Plan for 2002-04 strike an appropriate balance between issues specific to each land use (on the one hand) and fire control on the other hand. However, DUS remains open to further guidance about fuel management and vehicular access provisions and this is discussed further in Chapter 4.

Bushfire Fuel Management Plan (BFMP)

Reduction of fire fuel hazard can be undertaken in a number of ways, including prescribed burning, grazing, mowing / slashing and physical removal of fuel. The application of fuel management practices was considered in 1995 by the Glenn Taskforce on Fuel Management Practices in the ACT.

Following acceptance by the Government of the day of the Glenn Taskforce recommendations, the *Bushfire Act* was amended (commencing in 1996) to require each LMA to prepare a Bushfire Fuel Management Plan. The Act requires that a BFMP be prepared every two years and sets out matters to be included within the Plan.

Annexure 4 outlines the background to the legislative amendments which created the BFMP concept, and historical development of the BFMPs.

As outlined earlier in this Chapter, the Bushfire Fuel Management Committee was created to oversee development of consecutive BFMPs.

For the reasons discussed earlier, the 1998 and 2000 BFMPs adopted a precautionary principle in relation to the impact of prescribed burning on ecological values. These two earlier BFMPs are at Annexures 5 and 6 respectively. They incorporated relevant aspects from the public submissions made during the planning process, and are lengthy and complicated documents which reflect the difficulties posed in balancing public interests in this area.

Refinement of fire analysis and mapping within ESB and DUS resulted in a quite different draft Plan for the 2002/04 period. Prior to the December 2001 fires, inclusion of improved mapping and structural alterations had been considered, and a draft of the 2002/04 BFMP was prepared. The major fire at Stromlo in December 2001 provided further experience upon which to draw for amendments to the Plan. The 2002/04 Plan reflected a holistic and strategic approach to bushfire management. Details of the development of the 2002/04 Plan are in Annexure 7.

Importantly, the 2002-04 BFMP uses a strategic risk-based approach, designating Fuel Management Units (FMUs), which are separately mapped

priority areas for fuel management treatment. These FMUs were identified by analysing the ESB bushfire risk assessment model for important land areas. They are areas where fuel management treatments are required to reduce the chance of damage to assets or other values and may encompass one or all of the Fuel Management Zones.

The 2002/04 BFMP was completed in November 2002. A copy is at Annexure 8.

Fuel Management Policy and Techniques

Prescribed burning is one of a range of fuel management techniques applied in the ACT, which also include the physical removal of fuel, slashing/mowing and grazing. Grazing and prescribed burning are suited to broad land area fuel reduction. The other techniques are effective, but limited to relatively small areas to reduce fuel loads for asset protection. Implementation of these techniques for small area fuel reduction has increased significantly in recent years.

Small Area Fuel Reduction

CUPP manages a significant part of the urban edge, where fuel management activity on a finer scale is most important. Nodes of urban parkland leading from reserves and forest areas can have significant impacts within suburbs. CUPP undertakes both mowing and other fire fuel reduction works in order to provide fire hazard reduction at the urban edge.

CUPP land is based on six geographical districts and these are broken down into land types. Each land type has identified fuel reduction treatments in accordance with the BFMP.

The routine activity that is spread across all CUPP regions is fire fuel reduction mowing, which is identified in the BFMP and is part of the specifications of the horticultural maintenance contracts for the regions as per Annexure 9 **-** note fire fuel reduction mowing areas are shown in red.

The Fire Fuel Reduction Works Program for CUPP as set out in the BFMP, includes additional slashing, clearing for slashing, woody weed control, fence repair and installation, clearing of trees and shrubs, trail and drain maintenance and grazing as per Annexure 10.

The CUPP Fire Fuel Reduction Works Program, including the mowing program, is undertaken through horticultural maintenance contracts with Canberra Horticultural Maintenance, Cityscape Services and Spotless. The Cityscape Services mowing and maintenance contract crews also make up the two CUPP contracted bush fire fighting crews who form part of the Parks Brigade. This is achieved through a service level agreement between CUPP and the in-house provider, Cityscape Services. One Cityscape Services team is contracted for approximately 6 months, and the other for 5 $^{1}/_{2}$ months,

covering the fire season. Two senior officers are contracted for 12 months at a time.

Fuel management in the Murrumbidgee River Corridor (MRC) is undertaken by EACT. The MRC is a strip of land and river along the length (66 km) of the Murrumbidgee River in the ACT. The Lower Molonglo River Corridor (ie from the Murrumbidgee River to Coppins Crossing) is managed in conjunction with the MRC. Land uses include rural operations, recreation sites and nature reserves. It is up to 4 km wide. Steeper riverbanks, historically, were not cleared for farming. They now contain the majority of the native vegetation along the river. Other, flatter, stretches were cleared and now contain mainly introduced and native grasses and shrubs.

Fire fuel management in the MRC consists of slashing and mowing around recreation sites and along rural interfaces, and controlled grazing. The BFMP provides for some asset protection burning (by ACT Forests) and burning to control African Lovegrass which will also reduce fuel loads.

EACT & ACT Forests also undertake small area fuel reduction on their land. This mostly includes slashing and hand removal of fuels at the urban edge and around assets such as picnic grounds and other structures. The work undertaken for other land usages is described more fully in subsequent sections of this Chapter.

Broad Area Fuel Reduction

In *eucalypt forests*, strategic prescribed burning is an important tool used to reduce available fuels, in order to decrease the intensity and rate of spread of any bushfire which may start in or enter an area. This enables increased effectiveness of fire suppression operations. However, important water catchment, ecological and land use considerations render it inappropriate to undertake prescribed burning throughout the entire forested area of the ACT with sufficient frequency to continually maintain fuels at uniformly low levels. The most effective approach is to identify the pattern of wildfire ignitions, the assets to be protected, the different forest types and fire hazards and then to establish a strategic zoning system for the implementation of prescribed burning. In those areas where prescribed burning will be appropriate, burns can then be implemented on a rotational basis taking into account fire protection and ecological considerations. This type of strategic burning concept was identified for both ACT Forests land and the adjoining Namadgi National Park as part of the development of the 2002/04 BFMP. Further development of the Namadgi National Park Plan and Namadgi National Park Fuel Management Plan will be important in setting out the strategies and prescribed burning regime to be applied for this land (discussed further below).

The Bushfire Council has undertaken excursions to examine a number of important forest sites which were subsequently affected by the January 2003 fires. These excursions included Stromlo forest (pre 2001 fire), Stromlo forest (post 2001 fire), Mt Stromlo, Namadgi National Park and rural land in the

southern part of the ACT. At the time of the excursions, the Council did not identify issues of serious concern at the excursion sites. In the case of the Namadgi excursion, it was generally agreed by the Council that fire management for the Park needed to be considered in an holistic manner. It acknowledged that further planning and research would be required to identify appropriate fuel management practices for application in the National Park. When the Council examined the upgraded fire protection measures on Mt Stromlo it did not identify the need for any further action to protect the observatory complex. Likewise when the Council visited the plantation-urban interface at Duffy it did not identify the need for any further action in the zone adjacent to Eucumbene Drive.

In *pine plantations* the options for prescribed burning are very limited due to the fire sensitive nature of the pine trees. Fire management planning for pine plantations generally involves a series of measures designed to facilitate the rapid suppression of any fire that originates within the plantation, as well as measures in surrounding vegetation designed to limit the potential for wildfire to enter the plantation. In small strategic areas labour intensive programs to physically remove portions of the fuel within the plantation (eg. by pruning, low intensity burning or manual removal of debris) are undertaken to facilitate fire suppression operations. Following final harvesting of a plantation it is possible to burn any remaining woody fuels, although this practice is not applied routinely in order to maintain the incorporation of organic material into the soil. Other means of reducing the hazard include crushing the debris.

Fuel Reduction in Namadgi National Park

Namadgi National Park (NNP) is a large and important land management unit within the ACT. The considerations relevant for management of the Park are quite different from other land in the Territory, given its water catchment, conservation and wilderness values. The historical development of fuel reduction activity and fire management in NNP is outlined in Annexure 11.

During development of the 2002/04 BFMP issues surrounding fire management in NNP were identified for further consideration. These included both fire fuel reduction, and pre-suppression planning in areas such as track and road design and identification of water sources for fire suppression.

Development of effective fire prevention and management strategies for areas such as NNP, which are managed for their water catchment, conservation and recreation values, are undertaken with reference to:

- public interests in conservation;
- scientific research findings in relation to the effects of burning; and
- experience gained through fire events.

The process for review of current methods, and preparation of fire prevention and pre-suppression programs for NNP, was commenced in 2002. The NNP Fire Management Plan will provide policy direction and strategic and operational guidelines for fire management within Namadgi National Park.

The consideration of prescribed burning strategies for the Park will be a significant component of the development of this Plan.

Ongoing research and scientific analysis will provide the basis for preparation of the Namadgi National Park Fire Management Plan. A number of vegetation and fire history studies have been undertaken within the Park, with a significant focus on the Cotter Catchment. However, additional work has been required to consolidate the research and provide direction to assist in determining appropriate fire regimes and management strategies to protect key economic, biodiversity and hydrological assets from landscape level fires.

The development process for the Namadgi National Park Fire Management Plan is referred to in Annexure 12. Note that fire planning for Namadgi is discussed in more detail below at part D of this Chapter.

Prescribed Burning - Regulation

Implementation of prescribed burning requirements under the BFMP requires approvals and permits. A large number of issues, including objectives and standards, boundaries, smoke, resources, and notifications, must be considered in planning a prescribed burn. The failure to address any one of these issues may result in the objectives of the burn failing to be achieved, unacceptable environmental damage, the burn escaping and/or injury to fire suppression personnel or the public.

Current practice and legislation require detailed applications for prescribed burn approvals from various authorities. A comprehensive application is prepared. A recent sample document lodged by ACT Forests is at Annexure 13. The prescribed burn referred to in that application was commenced on 7 April 2003. EACT also has a Prescribed Burning Plan and Operations Record which addresses the issues required for planning a prescribed burn (see Annexure 14).

Once the Application has been developed, with an accompanying map, the application is sent to the EPA and ESB for separate approvals, and other applications are developed as necessary for various agencies which may be involved. The major agencies relevant to prescribed burns are:

- The CFCO at ESB – the CFCO requires that LMAs obtain a permit pursuant to the *Bushfire Act 1936*. The CFCO, under the Bushfire Act, has responsibility for approval of prescribed burns during the prescribed fire season. ESB also requires LMAs to obtain CFCO approval for prescribed burns outside the prescribed fire season, although such approval is not a staturory requirement. ESB is concerned with the operational fire details. ESB runs the expected conditions through a computer model to determine whether the conditions described will produce the required outcomes. At times the approximate conditions mentioned in the permit do not fit within the computer model, and it may be necessary to modify the application;

- The EPA – the *Environment Protection Act 1997* requires that an environmental authorisation be obtained before prescribed burns may be implemented. EPA has responsibility for prescribed burn approvals, mostly for regulation of the effects of smoke produced during such a burn. EPA are required to undertake a public notice process in relation to applications for environmental authorisations, and at the time they grant an authorization.
- For the purpose of public awareness, the LMA intending to undertake a prescribed burn also places a public notice at least two weeks prior to the burn. This is followed by a media release in the week prior to actual burning, as well as a media release on the day of the burn;
- If any burn is to be undertaken in native forest, EACT needs to undertake a flora and fauna study in particularly sensitive areas, such as Kowen Escarpment, prior to proceeding;
- If the burn is to be lit inside the built up area, a permit from the Fire Commissioner is required under the *Fire Brigade Act 1957;*
- If it will be necessary to place smoke warning signs on a public road, a traffic Management Plan must be issued under the *Road Transport (General) Act 1999.*

There is a need to liaise and reach agreement with all agencies which may have an interest in the burn. When the area near the Tuggeranong Expressway was burnt during 2002 a consultative arrangement was required. It involved the EPA, ESB, ACT Police, Roads ACT, Governor General and the National Zoo and Aquarium. It became a challenge to meet the requirements of all of these groups and still catch the small window of opportunity for effectively achieving the prescribed burns. Once approval for the burn had been granted, five weeks passed before a day occurred on which the burn would meet all the smoke and public notification requirements. It was also necessary for ACT Forests to obtain signage costing $3,000 in preparation for the possibility of smoke blowing in an unexpected direction.

Smoke Agreements

Environment ACT and CUPP (through Cityscape) have, for some time, held an Environment Protection Authorisation which includes Smoke Management Guidelines (see Annexure 15) which have been agreed with the EPA. This authorises prescribed burning to be undertaken within certain guidelines. The guidelines detail smoke management zones for the ACT that are specific to respective LMAs, and outline conditions under which prescribed burns may proceed, taking into account the likely impact of smoke upon the community. A similar authorisation has been issued to Act Forests. Until recently ACT Forests has operated under an ESB delegation and made application for each individual burn. Separate approvals are required under the Emergency Services Act.

Due to public concern about smoke, community awareness of proposed burns has been strongly encouraged by both ESB and DUS prior to the burns taking place.

Smoke Management Guidelines have simplified the process for undertaking prescribed burns. Furthermore, the Smoke Management Guidelines effectively give the LMA management and ownership of prescribed burning operations. With the finalisation of a Smoke Management Guideline for ACT Forests (currently being developed) all relevant LMAs will operate under a standard system for smoke management.

Prescribed Burn 'Window'

In the ACT there is a very small window of opportunity to carry out prescribed burns. It is preferable to undertake prescribed burns during Autumn as the risk of fire escaping from smouldering logs is lower than with Spring burns. The challenge in the ACT is that it generally enjoys only a short period of Autumn. After fulfilling the approval requirements set out above for prescribed burns it is necessary to wait until all conditions come within the prescriptions set out in the permit. There are thus very few days on which prescribed burning can be undertaken safely and effectively. This will continue to be the case, even with Smoke Management Guidelines, because smoke management restrictions stipulated in the Guidelines reduce the number of days when conditions will be suitable for prescribed burning to a very small number.

Other impediments to implementing prescribed burn hazard reduction programs include:

- public concern about burning close to urban areas;
- the *Bushfire Act* requirement to maintain resources at the burn site 24 hours a day until the burn is completely extinguished which can take many days, adding substantially to the cost conducting burns and reducing staff availability during normal working hours; and
- competing demands for staff time during the burning period.

Once a prescribed burn operation is to be undertaken, the LMAs each have protocols and expertise they draw upon to manage the activity. For example, EACT has developed a draft Prescribed Burning Manual and Prescribed Burning Pocketbook (2000) to assist its staff in conducting safe and effective prescribed burns.

Fuel Management – Implementation

CUPP

The CUPP Fuel Reduction works program set out in the 2000-2002 BFMP is detailed at Annexure 10, which also shows the areas where activities were undertaken in accordance with the works program. The works program carried out in 2002 is at Annexure 16.

Fire fuel reduction mowing undertaken by the horticultural maintenance contractors is subject to contract requirements and is generally carried out during October to March. The program is identified at Annexure 9. Visual inspections by the CUPP fire agency representative were carried out during the 2002/03 bushfire season to ensure compliance with required standards.

Roads ACT

During April 2001 an agreement was reached between stakeholders concerning management of ACT rural roads. Most tasks associated with rural roads thereafter rested with Roads ACT. Strategies for fire management in the period since 2000 have included annual grading of unsealed rural roads out to the table drain, mowing of sealed road verges, a program for poisoning of weeds and blackberry bushes near roads and around roadside structures / posts, and collection of roadside litter.

After the December 2001 Stromlo fire a detailed review of the system for management of rural roads was undertaken during 2002, resulting in implementation of a fire management strategy for sealed rural road reserves within the ACT. During the development phase for the strategy, the following issues were identified as important:

- Identification of sealed rural roads to be covered by the strategy;
- A bushfire hazard assessment for each sealed rural road;
- A risk management plan for each sealed rural road; and
- Maintenance measures to reduce the bushfire risk.

A program for the identification of sealed rural roads requiring the implementation of a bushfire management strategy was undertaken and numerous roads were identified.

Roads ACT used ESB Fire Hazard Index data over which it superimposed the sealed rural roads to determine the Fire Hazard Index for each road. A table was produced showing the relevant roads and their associated Fire Hazard Index and this is included at Annexure 17. This table also includes the annual average daily traffic movements (refer to column AADT) for each road, obtained from Roads ACT survey data.

Roads ACT conducted a risk assessment, using Australian Standard AS/NZS 4360:1999, for each road, to optimise the available maintenance funding against the requirement to reduce the fire hazards within the road reserve. The risk analysis and the Table showing the fire hazard index for each road was used to establish a maintenance regime for each road. Each road was allocated a maintenance regime number. The prescribed maintenance regimes are:

- *Maintenance Regime 1* – Mow from the edge of sealed road to the table drain once only during the period 15 October to 15 December and once only during February;
- *Maintenance Regime 2* – Mow from the edge of sealed road to the table drain once only during the period 15 October to 15 December;
- *Maintenance Regime 3* **–** Monitor and mow if growth greater than 750mm;
- *Maintenance Regime 4* **–** Do no maintenance for fire control.

This program was implemented in late 2002.

The unsealed rural roads continue with the same maintenance regime as prior to the Review because it was considered to be sufficient. The regime for unsealed rural roads requires grading of the road out to the table drains, which significantly reduces the fuel load within the road reserve. Also, these roads have very low traffic volume which reduces the likelihood of debris from vehicles igniting fires.

EACT

Environment ACT has steadily increased fuel management activities since the inception of the first BFMP, reflected in the increased budgetary commitment since the completion of the first plan. In line with the hazard assessment in the Plan, the majority of this work has been undertaken at the urban interface, consisting of:

- Slashing – over half of the current slashing program (2002-2004 BFMP) was complete as at 1 January 2003 and of the 39 separate programs scheduled for 2000-2002, all were completed as required with the exception of two actions that required further resources.
- Grazing – where possible, all grazing activities scheduled were undertaken, but several were unable to be completed due to low rainfall conditions. Despite this, the fuel management objective was achieved since the reason for not having grazing was the lack of fodder (ie. fuel). As a result of the drought (and lack of feed) and to achieve additional fuel reduction, in October 2002 EACT actively sought to provide areas for rural lessees that had not been previously grazed, primarily along roadside reserves, including Lanyon Rd, Foster Hill, Kambah Road and Stockdill Drive. This program was taken up by graziers and any areas where they considered there was adequate feed or need for fuel reduction (for example, Red Hill) were also considered. This program has continued after the fires in areas of Canberra Nature Park.
- Physical removal - All actions prescribed in the 2000-2002 Plan were completed and 9 of the 22 actions scheduled for the current plan were completed as at 1 January 2003

Annexure 18 provides a summary of the fuel reduction works undertaken in each of the periods July 2001 to June 2002, and July to December 2002.

EACT reviewed its operations post the 2001 Stromlo fires and, as a result, in addition to the works prescribed in the three Plans, a further appropriation was obtained in 2002 to undertake additional site specific fuel management activities. These include:

- Removal of heavy fuels and removal of understorey up to 30m from property boundaries at Gossan Hill, Aranda Bushland, Cooleman Ridge, and Macarthur Hill
- Removal of debris and “backyard extension planting ” from areas in Canberra Nature Park, combined with a public awareness campaign on fuel management and fire safety in conjunction with ESB

- Removal of large trees from Red Hill.

While there has been a significant increase in overall fuel management activities by EACT, there has been limited prescribed burning undertaken in recent years. The reasons for this are detailed in the introduction to this Chapter and in Annexure 11. Due to the extended drought and very dry conditions in Spring 2002, no burning was undertaken in the period. However, a number of prescribed burns are scheduled for autumn-winter 2003 in Black Mountain and Aranda bushland.

ACT Forests

ACT Forests has recently increased the amount of prescribed burning undertaken on its estate. It undertook prescribed burning in ten locations in the period between the cessation of the 2001/02 fire season and commencement of the 2002/03 season. This included six burns in Stromlo Forest between March and October 2002. A significant effort was also made to chip burnt trees and remove woody fuels from about 200 ha of forest burnt by the 2001 fire.

The table below describes the burns undertaken by ACT Forests over the past four years. .

YEAR	ACTIONS
2002	• 10 Hazard reduction burns
2001	• 2 Hazard reduction burns
2000	• 1 hazard reduction burn
1999	• 5 hazard reduction burns

Over the past four years grazing has been undertaken on 12 strategic sites surrounding the plantation to complement other hazard reduction activities.

During 2002, ACT Forests also undertook a major clean up and rehabilitation operation within the 500 hectares of Stromlo plantation burnt in the December 2001 fire. In order to reduce the remaining fuels over much of the burnt forest, ACT Forests arranged for the burnt trees to be chipped and removed as bio-fuel. This action meant that only a small proportion of the burnt plantation had to be treated in the more traditional manner of heaping debris and then burning it under suitable conditions.

Annexure 19 is a table setting out the hazard reduction activities prescribed by the 2000/02 BFMP and the works undertaken by ACT Forests to implement the Plan. As some works could not be undertaken, mostly due to difficulties achieving prescribed burns, other fuel reduction strategies were added to the program.

Following the 2001 Stromlo fire, ACT Forests reviewed its fire management strategies and programmes. As a result, plans to increase fuel management in plantations close to urban areas and in native forest to the west of plantations were designed and implemented.

The review of fire management strategy fed into the revised version of the 2002/04 BFMP. The outcome was an established fire management objective under the BFMP for all ACT Forest areas, and a subsequent set of Fuel Management strategies to achieve this objective. Maps for fuel management, road alignment and fire break construction and maintenance were developed to help reach the specified objectives.

Land Group
The Land Group's fuel reduction works program is set out in the 2002-2004 BFMP and is summarised in the Land Group Fuel Reduction Program in Annexure 20. Onsite inspection of the identified areas was undertaken by the LG Environmental Management Officer, who was accompanied on occasions by an expert consultant. Prior to the January 2003 fires, a number of the specified maintenance tasks had been undertaken to assist in reducing fuel loads on sites identified by the Fuel Reduction Program. Community consultation had commenced for one of the priority sites, while the preparation had begun for another.

Forest Access and Fire Breaks

Access Roads & Tracks
Access to forested areas is obviously crucial when fighting forest fires. Roads and tracks need to be sufficiently maintained to permit transport of large and heavy equipment to an area close to a fire. Roads, tracks and firebreaks can also be used as part of a strategy for indirect attack upon the fire (eg: backburning, and maintaining a fire within a controlled area).

However, the areas of land dedicated to water catchment protection, wilderness and national park for conservation and recreational uses pose difficult issues. There are tensions between optimum fire preparedness and public interest uses of the land.

During 2000/2001, EACT commenced a program for the maintenance and upgrade of its strategic fire trail network through Canberra Nature Park, Tidbinbilla Nature Reserve and Namadgi National Park.

The EACT program was designed to be implemented in three stages and this has occurred as follows:

1. Grading was undertaken on existing trails where it was deemed to be strategically important to assist in fire suppression efforts, fuel reduction programs and otherwise for management purposes (eg feral animal control access, recreation). The following grader work was undertaken in 2000/2001:

    - Approximately 35 km of trail maintenance in Namadgi National Park, primarily in the southern section of the Park along the Naas and Orroral Valleys;

- Approximately 15 km of trail maintenance in Tidbinbilla on internal management trails and boundary trails; and
- Approximately 150 km of trails throughout Canberra Nature Park.

2. A major upgrade of the Mt Clear Fire Trail (approximately 14km) was undertaken in Namadgi National Park during 2002. Heavy dozer work was required to clear and widen the trail to Tanker standard. Turnaround points were also constructed.

3. Following completion of the identified critical road and trail works, strategic planning for identification of further works was commenced, initially covering Namadgi National Park. Initially, this planning contributed to the preparation of the NNP pre suppression plan for the 2002/2003 fire season. The pre-suppression plan described existing roads and dormant tracks and their accessibility for fire fighting units. Since the fires in January 2003, further planning has been undertaken on the development of the strategic road and fire trail plan for the Park. The process will be extended to all areas.

ACT Forests has undertaken a complete review of its plantation internal road and track network in the period since 2000. The program aims, where possible, to design and build more roads aligned in the direction from which the worst fire weather originates; north-west / south-east. Re-alignment will enhance the ability to control fires safely from these roads and minimise the area burnt, by reducing the development of flank fires. As plantations are progressively clear-felled or rehabilitated, permanent road locations and design will be reviewed and where possible realignment will take place. Re-alignment was undertaken during 2002 for a number of roads within the plantation area burnt in the Christmas 2001 fires. A number of other dead end tracks were closed permanently.

The ACT Forests roads and tracks review also identified major fire access routes within each forest area. These fire access roads are maintained at a higher level, with minimum widths and clearance standards established. The aim is to be able to rely on these roads to make a safe defensive stand in the event of a wildfire.

During 2002 the roads, tracks and firebreak work undertaken by ACT Forests included:

- 9 km of realigned roads to facilitate fire suppression
- Over 150 km of strategic road clearing and grading
- More than 15 km of heavy dozer work completed for road maintenance on roads that would form boundaries for hazard reduction burning (Autumn and Spring 2003)
- More than 50km of general forest tracks had been graded to provide strategic fire breaks for the 2002/03 season
- Employed a small fast attack dozer for fire suppression

Strategic road clearing, grading and preparations to facilitate fire suppression had also been a strong focus for ACT Forests in years prior to 2002.

Firebreaks.
During development of the 2002/04 BFMP, ACT Forests reviewed the location, extent and design of its firebreak network. A review of this nature, and the effectiveness of any plans arising from the review, cannot be considered in isolation from the surrounding land. Strategic plans, crossing LMA boundaries, are required for effective tracks and firebreaks. An holistic approach to fire preparedness issues such as this is fostered by the 2002/04 BFMP and will be reflected in the matters considered during preparation of the NNP Fire Management Plan.

A D5 "first attack" dozer contracted by ACT Forests was used exclusively during 2002 to prepare tracks and firebreaks in readiness for the Autumn burning season. It was also intended that the dozer would be available for fast response to fires during the 2002/03 summer months. The dozer was making good progress during 2002, with many tracks ready for hazard reduction in Autumn.

D. Fire Management and Pre-Suppression Planning

The range of planning and preparations required prior to a fire are sometimes called 'pre-suppression'. Important aspects of fire pre-suppression, apart from roads and trails, include preparation for and/or identification of helipads, water points, helicopter hazards such as powerlines, emergency meeting points, significant environmental and ecological sites, significant cultural sites, and assets – structures, camping/picnic areas, and plantations.

Namadgi National Park (NNP) and Pre-Suppression

During development of the 2002/04 BFMP issues concerning both fire management and pre-suppression strategies in NNP were raised. A workshop during 2002 involving officers from ACT Parks and Conservation Service, ESB, Canberra Urban Parks and Places, ACT Forests and ActewAGL highlighted specific issues of importance for pre-suppression. A meeting with officers from Namadgi National Park also canvassed issues relevant to pre-suppression in NNP.

The development of a pre-suppression plan for NNP, in map format, was supported by the above agencies as providing accessible, accurate and consistent information to assist in suppression activities in Namadgi National Park and Tidbinbilla Nature Reserve

The initial Namadgi National Park Pre-suppression Plan was completed and distributed for use by EACT staff and ESB for the 2002-2003 fire season. The Plan (in map format) is at Annexure 21. The Plan details features within Namadgi National Park and Tidbinbilla Nature Reserve which assist the

functions of the EACT representative and ACT BS in suppressing fires, including:

- Road locations, standards, and access
- Helipads
- Water points (vehicle and helicopter)
- Hazards for helicopters – powerlines
- Significant environmental and ecological sites
- Endangered Flora and Fauna Locations
- Assets – structures, camping/picnic areas, plantation.
- Aboriginal and European Cultural Heritage Sites

The Pre-suppression Plan and issues arising from it will be reviewed annually as part of EACT pre-season planning.

In other jurisdictions fire pre-suppression planning includes design and preparation of Emergency Meeting Points (EMPs). These are predetermined and mapped locations within safe areas in forests, which can be used as staging points. They ensure that units responding to fires in these remote or unfamiliar areas do not place themselves in danger. All units can meet at the predetermined point, and then be led into the fire or incident by someone who is familiar with the area. EMPs have not been implemented as part of fire suppression management in the ACT.

Fire Management and Interface Issues

Cross Border

The fire management issues raised by the ACT-NSW border are unique within Australia, due to a combination of:

- the north-south orientation of the NSW-ACT border (adjacent to the western forested areas of the ACT) which increases exposure to an easterly / south easterly moving fire (and winds pushing such a fire are common during the hottest part of the day in the fire season);
- steep terrain to the west of the ACT which restricts management options and results in fires that are difficult to analyse and manage;
- the unbroken band of native forest along the western border which includes tree types that produce high fuel loads and are highly flammable;
- the proximity of a large city with an extensive rural-urban interface.

From the early 1940s until the mid 1990s, the BFC leased a band of NSW land adjacent to the ACT border known as the Brindabella Lease. This permitted some control over cross-border fire hazard reduction and suppression. However, the BFC had limited capacity for land management / fuel reduction in the area because its functions did not generally include land management. The 1995 Glenn Taskforce supported a view that fire-fighting techniques, based on quick detection and suppression, reduced the need for and advantage of leasing the NSW land. It was recommended that the Lease be given up if it was not possible to devote more significant funding to management of the leased land by a LMA.

Subsequent risk assessment undertaken during development of the BFMP, and the January 2003 fires, together show that fires entering the ACT from NSW present a significant threat and will continue to do so. Likewise, it is recognised that areas of NSW are threatened from fires entering NSW from the east and south of the ACT. The potential for impact on life and property has increased with the number of rural subdivisions and small acre properties being established to the east of the ACT in recent years.

Formal liaison with NSW has been primarily through the Australian Alps Liaison Committee, which co-ordinates the management of and co-operative research in relation to the Alps across the jurisdictions of Victoria, NSW, ACT and the Commonwealth. This body aims to address the management of the Alps at the landscape level and develop complementary policies and practices across jurisdictional boundaries.

Informal arrangements for cross border liaison have included ongoing consultation with NSW during the development of the first BFMP, incorporating issues of fire management in Kosciusko National Park. There has also been consultation on the development of the Namadgi Plan of Management and the Kosciusko National park Plan of Management.

Catchment Management

The Cotter-Bendora catchment is the major water supply system for the ACT, and along with the Googong reservoir, supplies the water needs for the city of Canberra. Specific vegetation types play a significant role in the supply and quality of water into the Cotter-Bendora system. The montane forests, particularly Alpine Ash type and sphagnum swamps, contribute a significant proportion of water relative to their overall area in the Catchment and this yield may be severely impacted by wildfire. An additional feature of the Cotter-Bendora system is the quality of water – currently, water from this catchment undergoes no filtration for domestic supply.

DUS is responsible for management of this catchment area, and Actew is responsible for the supply and maintenance of water quality. The agencies have adopted a co-operative approach to fire management in the water catchment to ensure maintenance of the quality and quantity of water supply.

Rural Leases

Land Management Agreements, which are now required under the Land Act for medium and long-term leases, establish a framework for ecologically sustainable management of leased rural land, and are negotiated with each rural lessee as the leases are renewed. They address issues such as land care requirements, fire and drought protection, and natural resource management.

In developing Land Management Agreements, fuel and fire management issues are identified in co-operation with the landholder and management

strategies developed. EACT established a rural forum to facilitate discussion with lessees about operational and policy issues. The forum meets every second month.

The threat of fire from the boundary of EACT managed land and rural leases is considered in the BFMP. These issues are addressed more comprehensively in the current Plan and lessees have also undertaken positive risk mitigation strategies, such as the creation of breaks along roadsides and strategic grazing.

Currently, fuel management strategies for areas of high conservation value on leases such as woodland, forests and native grasslands do not have established fuel management guidelines. This is because rural leases fall outside the BFMP process set out in the Bushfire Act. It is only as leases are renewed that Land Management Agreements are being negotiated.

Horse Paddocks

EACT is responsible for management of land dedicated to horse agistment in the ACT. EACT contracts out the management of the horse paddocks. In consultation with owners of horses and horse paddock managers, EACT developed guidelines for horse paddock management during emergencies. These procedures were developed in response to the 2001 Stromlo fires, when a number of issues relating to access, communication and safety arose with the owners and paddock managers. The procedures are detailed in the EACT Fire Action Plan 2002-2003, which is described below under 'Personnel'.

Urban Interface – Canberra Nature Park

Canberra Nature Park (CNP) includes the majority of the hills and open spaces throughout Canberra. Consequently, CNP contains significant areas of interface with the urban environment. Considerable effort has been focussed in this area in recent years in undertaking fuel management which has included the total removal of large vegetation and fuel, up to 30m from property boundaries in the areas of Gossan Hill, Red Hill, Aranda Bushland, Cooleman Ridge and McArthur Hill. A number of large trees were removed from Red Hill. Responsibility for education and awareness programs for fire preparedness on residential leases rests largely with ESB.

Powerlines on Unleased Land

The *Utilities Act 2000* is silent on responsibility for clearing vegetation beneath powerlines on unleased land. This is discussed further in Chapter 4.

Pine Plantations & The Urban Interface

In the aftermath of the ACT fires, a question of interest for the public is whether pine plantations contributed unduly to the devastation. Ultimately this question will need to be determined as an outcome of the various inquiries now underway. However, it is noted here that the intensity of a fire in any forest is primarily a product of the amount of available fuel in the forest. During periods of extreme fire danger, and lower moisture, most of the litter,

foliage and small diameter woody biomass becomes available fuel, regardless of the forest type. It is not a function of the tree species.

ACT Forests implemented a low intensity prescribed burn in the area adjacent to Eucumbene Drive in Autumn 2001, and a high intensity prescribed burn to remove logging slash within Narrabundah Hill plantation in March 2002.

Over the years, there has been considerable community opposition to the implementation of forest management operations within Stromlo and Narrabundah Hill plantations, including to the removal of mature pines and control of environmental weeds.

Over time, many residents have planted significant amounts of native vegetation on the plantation side of the footpath in the Duffy area, and often replaced grass with mulch or native ground cover. During 2002 the issue of fuel loads in many of the nature strips along Eucumbene Drive was raised at the Land Managers Fire Liaison Group. However, it was found that the nature strip guidelines were not breached. The nature strip guidelines were prepared predominantly for the purpose of considering public safety while moving about the urban area.

Personnel

Fire Officers and Fire-fighters
The Bushfire Act provides that the BFC appoints fire officers and fire-fighters in accordance with the Rural Fire Control Manual, which is prepared by the BFC. Appointment of officers at various ranks and with certain responsibilities is also a matter for the BFC. In practice the CFCO recommends appointments to the BFC for their approval.

It is not cost effective or efficient for ESB (through the ACT BS) to directly employ a sufficient number of people to provide the fire fighting services required in the ACT. Fire-fighting personnel and supplementary experienced fire officers are provided by DUS. A large number of fire-fighters are also provided through the Volunteer and Urban Brigades.

The basic *operational* fire-fighting structural hierarchy in the ACT, from most senior to junior, is as follows:

- CFCO – One officer, from ACT BS.
- DCFCO – 3 officers (1 from ACT Forests, 1 from Parks & Conservation Service, 1 from ACT BS)
- Group Officers – 3 operational Group Officers, being one from each of Forests, Parks & Conservation, and Cityscape. There is an ACT BS Group Officer, but he does not work on the fire-ground. The operational Group Officers are senior and experienced fire-fighters with the highest level of operational fire-fighting training. They are able to supervise a group of crews on the fire ground and may be appointed in the role of operational Incident Controller on the fire ground or at ESB.

- Brigade Officers – these are the Captain & Deputy Captain(s) of each Brigade. They undertake a level of fire-fighting training which is above the 'basic' and 'advanced' level required for crew members. They are required to supervise a crew on the ground and may be appointed as Incident Controllers; and
- Bush fire-fighters – up to approximately 80 from Parks & Conservation, 20 from ACT Forest and 16 from CUPP/Cityscape plus the Volunteer Brigades.

The DUS fire officers contribute significantly to the ACT's fire management expertise. Of the six senior officers (DCFCOs & Group Officers) within the ACT BS who provide support to the CFCO in command positions at larger fires, five are DUS staff. These DUS senior officers and other DUS staff also constitute a significant proportion of the staff trained to undertake leadership and support roles in the Planning and Logistics sections of the Incident Control System. The Incident Control System is a structure used to manage fire and other emergency events.

The DUS and Urban Brigades are the only dedicated firefighting resources that are guaranteed to be immediately available to the Bushfire Service for response to fires throughout the fire season. They contribute important knowledge of the land and are dispersed across the Territory in a range of strategic locations, providing for timely fire response. The volunteer brigades are technically required to stand ready for firefighting for the same period as the DUS brigades but, in practice, do not.

Arrangements for provision of firefighting personnel by DUS to ESB are detailed in an MOU between the DUS agencies with firefighting personnel and ACT BS. A new MOU is prepared for each fire season, to reflect the anticipated requirements for that season. A copy of the MOU for the 2002/03 fire season is at Annexure 22. The fire season runs each year for either or both the periods of 1 November to 31 December and 1 January to last day of February. It can be altered by the BFC via public notification.

The DUS fire officers and firefighting personnel are divided into two brigades, Parks and Forests. The Forests Brigade is made up of staff from ACT Forests. The 2002/03 MOU required Forests to contribute 20 people for fire suppression over a two-shift basis. In addition, ACT Forests agreed to provide a Deputy Chief Fire Control Officer, Group Officer, Captain/Deputy Captain and Agency Representative on a weekly roster basis during the fire season.

In 2000, ACT Forests was restructured to improve its commercial focus and skills base. As part of this restructure the number of permanent staff was reduced from 42 to 24. Twenty six staff opted to take voluntary redundancy packages and 8 new staff were recruited, providing a new mix of skills. It has sometimes been alleged that this reduced the capacity of ACT Forests to contribute to fire suppression operations. However, this is not the case. Prior to the restructure and the 2000/01 fire season, ACT Forests had a total of 23 staff available for firefighting, as many staff were either unfit or chose not to

participate. After the restructure ACT Forests actually increased the number of staff available for firefighting. In both the 2001/02 and 2002/03 fire seasons, ACT Forests has a total of 29 available fire-fighters including summer project fire-fighters. (As ACT Forests' commitment to the MOU requires all 24 of its staff members to be available, it employs 5 extra staff over the summer months to facilitate appropriate rests and rostering and to allow for illness.)

The Parks Brigade is made up of staff from EACT (primarily Parks & Conservation Service) and through CUPP (whose personnel are provided by Cityscape Services pursuant to a service level agreement). The 2002/03 MOU required Parks & Conservation Service to contribute 30 staff for firefighting plus officer positions. CUPP / Cityscape was required to contribute 14 firefighters and an officer. However, the Parks Brigade for the 2002/03 season was made up of a total of approximately 90 personnel, 17 of whom were from CUPP / Cityscape and the remainder from EACT.

Agency Representatives
In addition to firefighting crews and fire officers, each LMA has an Agency Representative who:

- provides information to ESB on assets, location of certain important features, or other key information;
- organises specialist or relief support from the LMA;
- reports to, represents and protects the interests of the agency as far as possible in the circumstances.

The Agency Representative also provides a continuous contact point for other LMAs and the public on issues relating to fire, fire injured animals, straying stock, injured wildlife, horse paddock management, and any other matters where urgent interaction with the LMA is required. The LMAs have developed a series of Standard Operating Procedures to provide a consistent response to issues raised.

Under the provisions of the MOU with ESB, each LMA agrees to make available an Agency Representative to liaise with the appointed Incident Controller or ESB Service Management Team.

According to a roster prepared by each LMA and provided to ESB, an Agency Representative is contactable 24 hours per day for 365 days per year. The representative is generally rostered on a weekly basis.

Fire Tower Personnel
ACT Forests provides ESB with contract fire spotting services for the Kowen and Coree fire towers. For the past 3 seasons, ACT Forests has provided this service using sub contractors.

Standby

In order to ensure firefighting personnel are standing by and ready for swift response to any fire, the MOU sets out the requirements for standby for fire duty by each Brigade. The standby requirements for DUS firefighters depend on a pre-arranged notification of a state of 'readiness', which is based on the expected fire danger for the day, ranging from Low to Extreme. The higher the state of readiness, the more personnel and equipment is required to stand by, and the faster the required fire response time. At the highest two levels of readiness (during high fire danger periods) DUS staff may not be permitted to go about their normal LMA duties and will often be required to standby at a location specified by the ACT BS. Some DUS personnel are often required to stand by at rural locations specified by ACTBS. The cost of providing firefighters on standby during the summer is borne by DUS even though it has no control over the actual hours during which these personnel are utilised each day.

Standby locations, staff rostering and levels of readiness are detailed by LMAs in procedural documents distributed to staff at the beginning of each fire season. See for example the EACT Fire Action Plan at Annexure 23.

The rotating rosters used by the LMAs for standby and firefighting duties permit adequate resting between shifts, and ensure the brigades are able to meet their crewing arrangements on an ongoing basis. This is important for all LMAs and especially during large fire events, because crews will be required on a strict shift rotation basis. With the procedures in place, lengthy fire standby seasons and large fire events can be managed. However, long and high fire danger seasons diminish the amount of normal duties that staff are available to undertake. ACT Forests was severely affected in this way during the 2002/03 season.

Deployment

Deployment of personnel and resources to a fire is directed by the responsible Duty Officer at the ESB Communication Centre in Curtin. The procedures for deployment of standby resources by the Duty Officer are detailed in the ESB Standard Operating Procedures. The request to attend a fire is generally made directly to a Brigade, with details of the number of crews required. The Agency Representative for the LMA on whose land the fire is located will be notified.

In the event of larger fires which require resources in addition to those on standby, or when shift arrangements are required, the request for additional resources is made by the ESB Duty Officer to the Agency Representative. The Duty Officer is required to specify the number of resources (including fire fighters and Officers), the type of fire (Moderate, Arduous), time required, duration of shift and any further special requirements. The Agency Representative is responsible to determine the availability of resources, through the Managers in business hours, or from staff rosters and resource lists out of hours.

Firefighting personnel from a particular LMA may or may not be called to fires on their land. The responsibility for suppression of all fires outside the "Built Up Area" lies with the CFCO pursuant to the Bushfire Act, and operational responsibility for deployment of particular staff rests initially with the Duty Officer and then with the Incident Controller appointed by the CFCO. The Incident Controller may, or may not, be a representative from the relevant DUS LMA.

Occupational Health and Safety
The *Occupational Health and Safety Act (1989)* provides that an employer must take reasonable and practicable steps to protect the health, safety and welfare at work of its employees.

This duty extends to taking *reasonably practicable steps* to ensure that the workplace is safe and free from risk, and that there is safe and adequate entrance to and egress from the workplace. The workplace is any premises where employees or self employed persons work, and includes the places where fire suppression activities take place.

The MOU provides that DUS LMAs will work with ACT BS to ensure to the best of their ability that the safety and wellbeing of DUS staff is given proper consideration. The MOU also refers to the LMA and ACT BS working together to meet their "duty of care" responsibilities to staff.

The duty of care owed to employees requires rostering of staff that provides for regular breaks to manage fatigue. Some existing employment awards for DUS staff reinforce the requirement for breaks by provision of high overtime payments to staff for long shifts while on fire duty.

Other OHS issues arise in relation to the deployment of crews and decisions made on the ground, and at headquarters, concerning where crews are located and what firefighting methods are used in each fire situation. The effective use of the Incident Control System for managing a fire event provides an appropriate chain of command, with decisions being made by a person with the correct experience and information available to the them.

LMA Operational Preparedness
There are guidelines and procedures supplied to, and to be applied by, staff in preparing for and responding to fire events:

- EACT has a Fire Action Plan which is reviewed annually. In addition to detailing the structural arrangements within ACT BS for firefighting, providing contact details and operational procedures for Parks & Conservation Service districts, the Plan also contains information relevant to associated fire injured animal incidents, firearms management, park entry restrictions and closures, and horse paddock management. (See Annexure 23 for the 2002-2003 Fire Action Plan).
- ACT Forests has a Fire Arrangements document which is replaced annually. It incorporates a description of the general arrangements for firefighting with ESB, training, fitness, standby, staffing of units, equipment, weekend work, long campaigns, weather forecasts, and

detailed instructions for completion of fire season duties. A copy of the 2002/03 Fire Arrangements document is Annexure 24.

Equipment

The provision of equipment for firefighting is shared between the ACT BS and the LMAs which provide firefighting personnel.

The MOU states that ACT BS will provide and maintain the following equipment:

- Four tankers and five light units for the Parks Brigade; and
- Two heavy tankers and two light tank and pump units for the Forests Brigade. The light units are intended to be slipped onto 4WD tray back vehicles supplied by ACT Forests.

The heavy tankers have traditionally had 6000 litre capacity tanks. ESB has a replacement program for its tankers. Recent replacements have provided smaller capacity, 3500 litre tankers.

All other equipment is provided by the LMAs at cost to DUS. This includes:

- an extra slip-on pump/tank unit through ACT Forests, and used with one of ACT Forests 4WD tray back vehicles;
- command vehicles for Deputy CFCO, Group Officer and Brigade Officers (with appropriate communications equipment);
- some resources and equipment for DCFCO, Group Officers and Brigade Officer;
- personal protective equipment for all brigade members;
- firefighting equipment – hand-tools, RAFT (remote area) equipment etc.;
- dozers.

Training

Firefighter and Officer training

DUS and ACT BS have joint responsibility for training firefighting personnel. DUS is responsible for 'basic' firefighting training and ACT BS is responsible for Group Officer and specialist firefighting training. The *Bushfire Act* provides that the Rural Fire Control Manual must include standards and requirements for the recruitment and training of fire officers and brigade members. ACT BS has undertaken the role of prescribing and preparing the training material.

For many years the ACT has had a regime for firefighting training which is based on 8 modules set by the ACT BS, completion of which provides for basic firefighting competency. All DUS firefighting personnel (including any temporary staff employed for the fire season) are trained pursuant to this regime before the start of each fire season, including prior to the 2002/03 season.

The Australian Fire Authorities Council (AFAC) has established the Fire Qualifications Training Framework which prescribes national training standards required for bushfire fighters at all levels within Australia, with particular reference to fire fighting and incident management roles performed under the Australian Inter-Service Incident Management System (AIIMS). A central component of AIIMS is the Incident Control System (ICS), which provides the structure for chain of command and communications during a fire event.

Training modules and assessment tools specific to the ACT are being prepared by ESB, using the AFAC national materials.

There are four levels of firefighter within the AFAC national firefighting competencies;

- Basic Bushfire Fighter – the person cannot go onto the fire ground without supervision. Implementation of training is the responsibility of the Brigade (in the case of DUS, being both Parks & Forests Brigades). ESB sets the modules and assessment tools for the training program. There are 5 Units of Competency to be completed to meet this level. As at January 2003, ESB had completed the training material and assessment tools for one of these Units - "Communications". Other materials and assessment tools are being prepared by ESB.
- Advanced Bushfire Fighter – the person operates under orders but without direct supervision. Implementation of training is the responsibility of the Brigade. ESB provides the training modules and assessment tools. There are four Units of Competency to be completed to meet this level. As at January 2003 the training material for "Navigate in Urban and Rural Environments" had been developed. Once DUS is advised the assessment tools are complete, the relevant DUS employees will undertake the course.
- Brigade Officer – supervises bushfire fighters. Training is the responsibility of ESB through the ACT BS. There are 3 Units of Competency to be completed to meet this level. Training material and assessment tools are being prepared and implemented by ESB.
- Group Officer – manages an incident where several Brigades are operating. Training is the responsibility of ESB through the ACT BS. There are 3 Units of Competency to be completed to meet this level. Training material and assessment tools are being prepared and implemented by ESB.

A target was set by ACT BS for all Brigade members to complete "basic bushfire fighter" and "advanced bushfire fighter" training under the new AFAC national competencies by the end of September 2003. Staff from all DUS firefighting crews have been trained and assessed in the modules so far developed by ESB for national competency.

In order to provide a targeted training program during 2002, ACT Forests conducted a "fire training needs analysis" after the 2001 Stromlo fire. Following from this a course in map reading was developed by ACT Forests

and delivered prior to the 2002/03 fire season. EACT is planning similar training.

Another area identified by ACT Forests for enhancement of operational skills was backburning. This task requires significant prescribed burning experience and a thorough understanding of fire behaviour in light of weather, topography and fuels. At present very few DUS staff have formal training in the implementation of prescribed burning or backburning operations. Given the limited opportunities for prescribed burning and backburning experience in the ACT, ACT Forests sent one of its staff to a Fire Management Techniques course held by the Department Natural Resources and Environment in Victoria during 2002. It is intended that this officer will develop and deliver a fire management techniques training course for the land managers in the ACT.

Skills Analysis

ESB keeps a basic database of the skills of fire-fighters and officers.
Internal skills analysis at ACT Forests commenced during 2001 to determine what specialist skills and training are available and whether any gaps can be identified. It is important not to focus all training in one area, to the detriment of other important skills. Analysis prior to the 2002/03 fire season indicated that ACT Forests had increased the skills mix and fire-line capability in 2002/03 from previous years.

A skills database was developed by EACT prior to the 2002/03 fires, to identify training needs and the spread of skills within the organisation. The database was prepared independently from the skills database held by ESB because it incorporated relevant, but non-firefighting, skills (eg firearms, fire injured animals, urban wildlife).

Fire fitness assessment

Two years ago, the DUS Land Managers Group implemented a compulsory fire fitness policy for all employees involved in fire fighting. This fitness standard requires such staff to have passed either of the moderate or arduous fitness levels. The moderate level is required for anyone going onto the fire ground, while the arduous level is a requirement for any person involved as a member of a Remote Area Fire Fighting Team (RAFT). Any fire that requires people to be self-sufficient, and away from their vehicle for the full shift, is classed as a Remote Area Fire.

Fitness assessment results prior to the 2002/03 fire season were:

- ACT Forests - of the 29 available fire-fighting staff, 8 passed the moderate level and 21 passed the arduous level fitness assessment;
- EACT – of the 76 available fire-fighting staff, 46 staff met the moderate fitness level and 30 met the arduous fitness level; and

- CUPP – of the 16 fire-fighting staff, 14 passed at arduous level and 2 at the moderate fitness level.

Refresher fire training

Three years ago DUS commenced compulsory annual refresher training to boost firefighting knowledge and skills prior to the commencement of each fire season. The first of these sessions, held in October 2000, was based on the content in the AFAC nationally recognised basic fire training modules. Subsequent sessions have included fire behaviour, watchouts (recognising potentially dangerous situations), evaluation of "near misses", communication and remote area fires. In late October and early November 2002 refresher training was held over three sessions to ensure all DUS firefighting personnel could attend.

DUS encourages its employees to have a current first aid certificate. Training is provided. During 2002 a number of staff undertook refresher courses to ensure their qualifications remained current.

Operator training, 4WD, tanker, chainsaw etc

In addition to the DUS pre-season refresher training, the LMAs undertake annual brigade training, predominantly to reinforce tanker and light unit operational skills. All Forests Brigade members are trained for hands on use of this equipment. EACT has 13 trained tanker operators and CUPP / Cityscape has 6 trained tanker operators.

Chainsaw training is important, given the dangers which can be presented by use of this equipment. More than 80% of the ACT Forests Brigade (19 personnel) are accredited in the use of chainsaws - four members hold advanced level accreditation. EACT has 29 basic and intermediate trained chainsaw operators and 1 advanced level operator. CUPP / Cityscape has 14 basic and intermediate level chainsaw operators.

Incident Management Team Training

Each of the DUS brigades has staff who have undertaken Incident Management Team training, so that they may perform roles as senior fire officers within the incident control structure during a fire event.

The ACT BS prepared and provided ICS training during 2002 (it was not a nationally accredited module). Each of the LMAs had staff attend the ICS courses in October and November 2002 (including 50% of ACT Forests staff and 3 CUPP/Cityscape officers).

Prior to the 2001 Stromlo fire, and before the ACT BS training in ICS was presented, ACT Forests approached Natural Resources and Environment (NRE) in Victoria for provision of nationally recognised and accredited training for some of its staff. Five ACT Forests personnel, who take on senior officer

roles during fire events, undertook the specialist Incident Management Team training over the 18 months prior to the January 2003 fires.

E. Preparedness – Past Experience

Following the 2001 Stromlo fires ESB undertook a debrief. The debrief included 102 issues and recommendations. It drew on experience from the ACT Stromlo fire, and also the Coronial Inquiries into the Linton Fires (Victoria) and Kur-Ring-Gai Chase National Park Fires (NSW).

The full list of issues, recommendations and responsible bodies is attached at Annexure 25. Of those recommendations, the following have some relevance to DUS:

Rec. #	Priority	Recommendation	To be considered by	Action officer
6	High	A full briefing is to be carried out for all people attending prescribed burns	LMAs, ACT BS	B&ES Ops Manager
7	High	A senior officer should verify that OH&S issues have been addressed prior to any prescribed burn	LMAs, ACT BS	B&ES Ops Manager
8	High	An effective control centre is to be established at every prescribed burn	LMAs, ACT BS	B&ES Ops Manager
32	High	Review road closure procedures	ESB, FCG, AFP, DUS	Logistics coordinator
39	High	Develop procedures for safety of people in horse paddocks during bushfires	EMC, DUS, ACT BS	EMC
52	Med	Determine responsibility for assessing and clearing trees on verges and in public areas	EMC, DUS	EMC
66	Med	All hazard reduction burns use the ICS and the positions under that system	LMAs, ACT BS	B&ES Ops Manager
78	Med	Review payment arrangements to land managers for fire fighting duties	ACT BS, DUS	CFCO
85	Low	Develop a database of high risk evacuation areas	EMC, AFP, ESB, PALM	EMC
91	Low	Cyclists and pedestrians hard to control – develop a traffic management SOP	AFP, DUS, ESB	B&ES Ops Manager
95	Low	Develop program of public	EMC, ESB,	EMC

		education that looks at issues from the debriefs	LMAs	

While DUS was not identified as the action agency for any of these recommendations, the following actions have been taken by DUS since the debrief:

- Rec's 6, 7 and 8: these have been implemented by DUS in relation to all burns subsequent to the Recommendations.
- Rec. 39: Horse Paddock operational procedures were developed for safety during bushfires. They were included in the 2002-2003 EACT Fire Action Plan and presented to horse owners and managers at various forums in 2002. Feedback indicates the procedures worked very effectively the 2003 fires.
- Rec. 52: responsibility for assessing and clearing trees in urban areas rests with CUPP and for rural roads rests with Roads ACT. These agencies took responsibility for tree assessment and clearing on road verges and in public areas after the January 2003 fire.
- Rec. 66: DUS prescribed burns utilise the ICS command structure
- Rec. 95: As part of a joint campaign with ESB for public awareness leading up to the 2002/03 fire season, DUS agencies initiated a letterbox delivery on householder bushfire preparedness to households at the urban edge and a letter to engender increased understanding of fuel management strategies. Copies of some relevant letters are Annexure 26.

F. Budget

The following material provides an overview of fire related expenditure by the major LMAs over the past three years. Fire expenditure has increased, particularly due to the large fire events in December 2001 and January 2003. Increased labour intensive fuel management activity has also added to fire expenditure in recent years.

The table does not include possible additional recurrent funding and staff overheads.

LMA	**0/01**	**01/02**	**02/03 (Current)**
Environment ACT	$180,000	$547,000	$867,000
ACT Forests	No record	No record	$501,000
CUPP	$138,000	$167,000	$716,000
Roads ACT	$ 90,000	$ 96,000	$ 82,000
Land Group	N/A	N/A	$200,000

ACT Forests records in relation to fire expenditure in past years were destroyed by the January 2003 fire. The best recollection by the Director of ACT Forests is that expenditure in 2000/01 was approximately $375,000. The Director of ACT Forests recalls that fire expenditure for 2001/02 was

approximately the same as 2002/03. The January fires will result in the loss of most of ACT Forests' commercial revenues and will threfore impact on its ability to maintain its current level of fire management capacity without substantial additional CSO funding.

Total DUS expenditure on fire management for each of the past three years has thus been (approximately):

2000/01: $ 783,000
2001/02: S 1.311m
2002/03: $ 2.366m

The Land Group first took on fuel reduction responsibilities when it was allocated land management responsibilities for all unleased ACT land in February 2002. Its expenditure has therefore only occurred in the current financial year. Over and above the $200,000 per year dedicated to fuel reduction activities, including weed control, a further $100,000 is dedicated to a maintenance fund, providing for fuel reduction works outside critical zones.

Funding for Fire-fighting Personnel

Historically, the department or agency providing fire-fighting personnel was reimbursed for the cost to that agency of providing fire-fighters during the course of a fire event. There was no reimbursement for the cost of having personnel on standby, but only for actual firefighting. More than 15 years ago, each agency was given the option of either receiving an annual increase in appropriation based on a standard fire year or continuing to receive reimbursement for fire fighting. (Note that at that time the LMAs were not domiciled in a single department.)

ACT Forests opted for straight reimbursement for services provided by firefighting personnel to the fire suppression authority. There is no reimbursement for standby, only for periods of active fire-fighting / IMT duties.

EACT and CUPP chose to receive appropriations for fire-fighting, based on a standard year (the expected level of standby and fire-fighting for a year, based on historical levels). However, additional appropriations are paid for extraordinary years (eg: December 2001 and January 2003).

Chapter 3

JANUARY 2003 - RESPONSE

A. Background

In the ACT, for many years, the fire experience has been of several hundred small fires each year. Most of these fires are of human origin, occur relatively close to the urban area and are controlled at a very small size. The people of the ACT are accustomed to a high level of success from the fire management strategies employed in the Territory. That success derives from:

- a successful approach to urban planning;
- diligent fire planning and preparation;
- the system of rapid deployment of well-trained personnel and appropriate equipment.

There have been very few fires in the remote forested areas of the ACT at times of severe fire weather.

In December 2001, when there was a spate of deliberately lit fires around the city on a day of high fire danger, the suppression resources and strategies deployed ensured that these fires were contained over a three day period. Although rural assets and plantations were destroyed there was no loss of houses.

The fact that most fires in the ACT are relatively small in area and occur close to urban areas has resulted in a fire fighting force that is highly experienced in fast response and suppression of small fires, primarily in grassland and open woodland. Exposure to fire fighting in more remote and heavily forested terrain has been more limited. The two situations described require different skills and approaches to fire suppression.

It is acknowledged that, while fire preparedness and response in the ACT has worked well in “normal” summer circumstances, it could not reasonably be expected to provide a response adequate for the extraordinary circumstances in January 2003. It is the preliminary view of DUS (based on available scientific information and practical experience, and taking into account relevant land uses) that the 2002-2004 BFMP will be appropriate in relation to fuel management. We also note that further work has commenced in relation to access tracks in Namadgi National Park. However, it may be that the various inquiries now underway will suggest or recommend more intensive measures. The Department is committed to implementing any such measures which the Government decides to adopt.

B. DUS Contribution to the Response

Overview

During the afternoon of 8 January 2003 a storm formed over the ranges west of Canberra. There was a wide range of lightening strikes, stretching from the high country in Victoria, up into NSW and the ACT. Some reports have indicated that approximately 140 fires started in NSW and about 80 in Victoria. These all occurred within hours of each other and actuated deployment of resources in many directions by agencies from all three jurisdictions.

Between approximately 3.30pm and 4pm on Wednesday 8 January 2003 smoke was observed, from fire towers, to be rising in the Bendora and McIntyre's Hut regions. Shortly thereafter fires were noted in the Mount Gingera and Stockyard Spur areas. The McIntyre's Hut fire was in NSW, but the others were within the borders of the ACT.

At the direction of the ACT BS, many DUS employees, including the Parks and Forests Brigades, worked very hard in difficult circumstances to assist in the efforts to suppress the fires and deal with other issues arising from unfolding events.

The DUS response to the January 2003 fire events has been very significant. It has included:

- deployment of Parks and Forest Brigades;
- participation of senior fire officers in incident management at ESB;
- provision of other expert, administrative, media and liaison staff to ESB beyond 'normal' requirements;
- efforts by the agencies who employ fire-fighting staff to participate and assist ESB with rostering of their staff as this task became difficult with the lengthy and demanding fire events;
- participation on the Emergency Management Committee;
- provision of liaison and administrative assistance at the AFP headquarters when the State of Emergency was declared; and
- DUS staff undertaking their normal roles which were activated as a result of the issues arising at the time of the fires and thereafter (eg: park closures, road closures, road and land clearance, tree clearance, injured animal destruction, and the enormous ongoing recovery effort for both the urban and rural property damaged and destroyed and the LMA property and assets damaged and destroyed).

Brigades

Although DUS employs the personnel who form the Parks and Forests Brigades, the Brigades are actually formed by, and under the control of, ACT BS. It is anticipated that ESB will provide detailed information about the fire-fighting effort in its submission. The material below provides some

background concerning the commitment by DUS staff to the fire-fighting effort.

The 2002/03 fire season commenced earlier, and had more days of high fire danger, than recent years, requiring a high level of staff commitment for stand-by duty. A fire started by a lightning strike in Namadgi in November 2002 required attendance by remote area crews on a 24 hour shift basis over several days.

Most ACT bushfire brigades stand by in areas close to the urban edge. Travel to the January fires, in the early stages, took approximately 1.5 hours. Fire units were deployed from each of the Parks and Forests Brigades immediately after the fires began on 8 January. They were committed to the fire-fighting effort, at the direction of ACT BS, thereafter until the events of 18 January 2003 (and thereafter until the fires were effectively suppressed).

Deployment of fire-fighters was initially directed by the Duty Officer at ESB, and the ICS thereafter took over management of the fire event. A description of the ICS is provided in the next section of this Chapter.

Fire-fighters were deployed during the day from 8 to 31 January 2003. Night shifts commenced, with a small number of personnel on the ground overnight from 11 to 13 January 2003. From 14 January 2003 to 18 January 2003 a larger number of fire-fighters was deployed on overnight shifts.

The crews deployed on 8 and 9 January 2003 included brigade officers (Captain & Deputy Captain). The first deployment of senior officer level trained fire-fighters (DCFCO and Group Officers) to operational fire-fighting tasks for the January 2003 fires was on 10 or 11 January 2003.

Forests Brigade

ACT Forests generally has available 10 crew members for active deployment on any one shift. ACT Forests also provides approximately four senior officers who are incorporated into the ACT BS Incident Management Team (IMT). However, some of these senior officers have dual roles, viz. as part of the available crews and as part of the IMT if required.

Annexure 27 is a table of the numbers of staff requested by and provided to ESB for fire related duty in the period 8 to 21 January 2003. During the early stages of the fire, the Forests Brigade was not fully deployed. As the fire developed there were several instances of people working very long and intensive shifts. Towards 18 January 2003, several Forests Brigade staff had their homes threatened and hence were unavailable to use on units. Several had their houses burnt down and lost their vehicles rendering them unavailable.

Parks Brigade

CUPP, through Cityscape, has available 8 crew members for active deployment on any one shift, plus senior officers for incident management roles. The roster for crews in the period from 9 to 27 January 2003 is at Annexure 28.

Two officers from CUPP (through Cityscape) were involved in incident management roles throughout the period from 9 to 27 January 2003. CUPP / Cityscape also provided a logistics officer.

The MOU requires the provision of 30 fire-fighters plus officers from Parks & Conservation Service upon request by ACT BS. However, for the 2002/03 fire season, the Parks Brigade included approximately 80 Parks & Conservation staff who were trained, fit for and capable of undertaking fire-fighting duty.

During the period 8 to 10 January 2003, approximately 20 Parks & Conservation Service staff were deployed each day. Thereafter, there was a build-up to approximately 60 fire-fighters and officers involved from 10 to 31 January 2003 in addition to staff supplied to ESB for Incident Management roles.

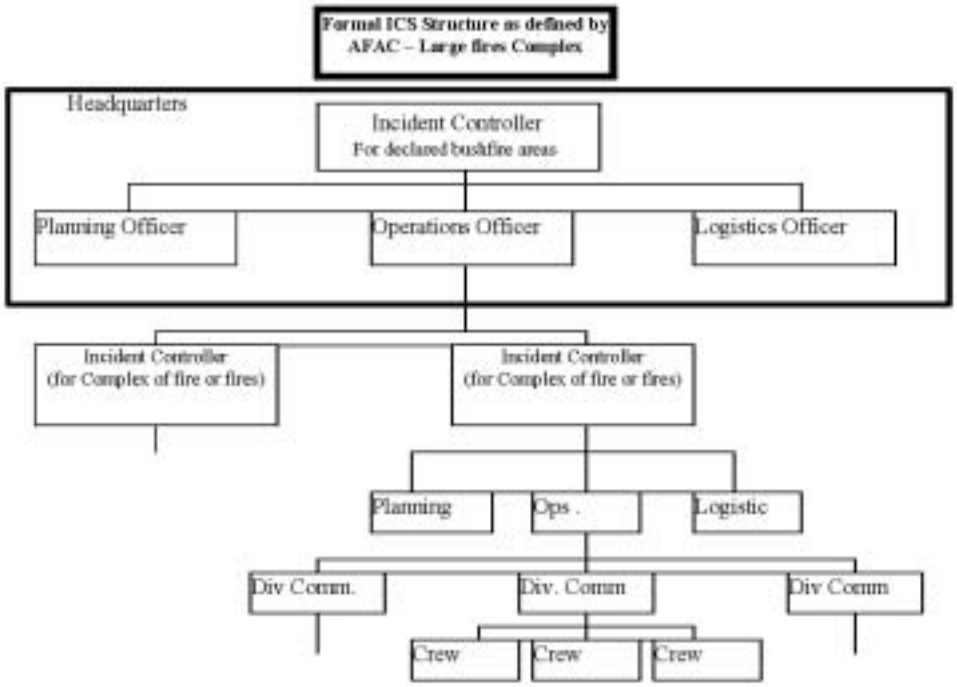
The Incident Control System

An Incident Control System (ICS) is a command structure for the management of emergency events, including fires. The system is used across Australia and can be adopted for both large and small events, including multiple fires and involving a range of agencies. ICS is the central component of the Australian Inter-service Incident Management Systems (AIIMS) concept which was developed through the Australasian Fire Authorities Council (AFAC). ICS is based upon the following basic principles for management of an event:

- Defined objectives determine management of the event;
- A single person controls the event;
- Each responsible person in the chain of command has liaison with / command over no more than about 5 others;
- Each position has functional responsibility for set tasks;
- Management Plans form an integral part of the control of the event; and
- Control of the event is maintained within one agency.

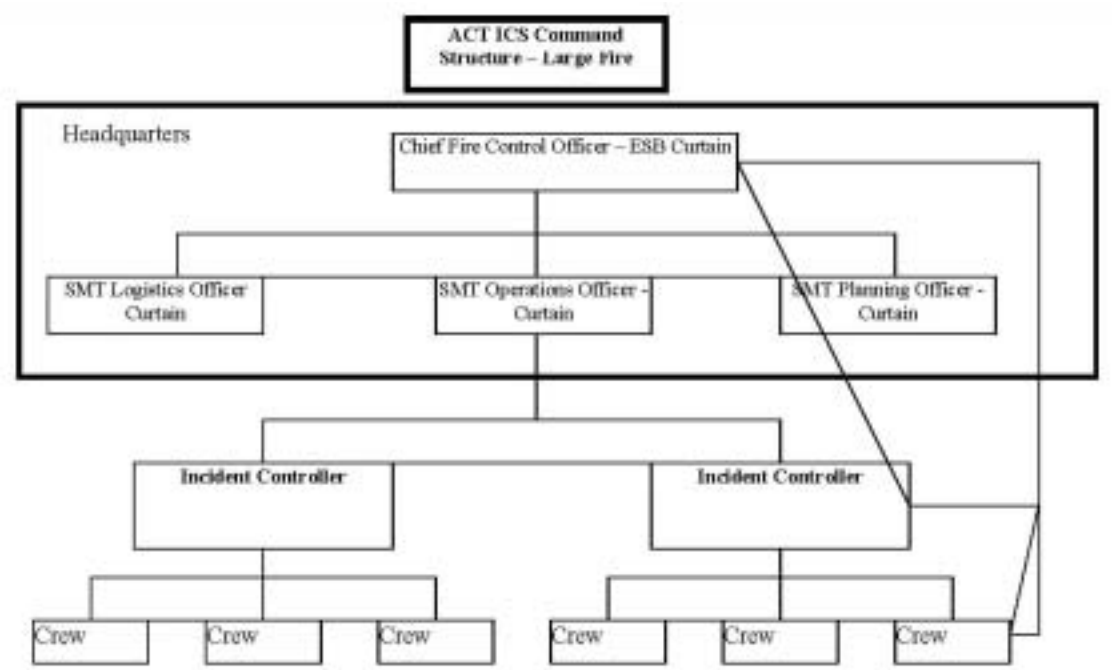
The ICS is implemented through an Incident Management Team consisting of the Incident Controller, Planning Officer, Logistics Officer, and Operations Officer, supported by teams of planning, logistics and operations personnel. The Incident Controller has responsibility for all aspects of the fire suppression operations, including strategic planning and logistical support functions.

The diagram below demonstrates the AIIMS ICS. It makes reference to the Headquarters Incident Control Team. During large fire events the Headquarters Team does not have direct involvement with operations at any particular fire. Its role will be to take an overall view of the fire situation in the jurisdiction and make final decisions on resourcing if there are conflicting requirements from the different operational fire complexes. The Headquarters Team will also provide the support required for media and political liaison.



A modified ICS operates in the ACT. In the ACT the headquarters incident control team is called the Service Management Team (SMT). That team includes the CFCO, the Duty Co-ordinator/Operations Officer as well as planning and logistics functions. During the January 2003 fires the Incident Controller operated separately from the Service Management Team and was not provided with a supporting Incident Management Team. This ACT model fostered communication about deployment directions directly with crews by the CFCO/SMT and generally excluded the Incident Controller's involvement in the preparation of incident action plans.

The diagram below demonstrates the ACT ICS as understood by DUS personnel working within the system.



Service and Incident Management Teams

The Service and Incident Management Teams at ESB during the course of the fire event were made up of personnel normally employed by ACT BS, and also DUS staff.

Eight fire officers from Parks & Conservation Service, six from ACT Forests and two from CUPP/Cityscape took on senior roles within the SMT and Incident Controller position during the January 2003 fire event. They performed roles which included the Incident Controller, Operations Officer and Planning Officer.

DUS provided other personnel to fulfil the following roles at the direction of ACT BS, in addition to key officers managing the SMT units:

Operations Unit

- Air Operations Manager (manages the deployment, communications, and logistics of aircraft operations)
- Plant/Heavy Equipment Manager (manages the deployment, communications, and logistics of heavy plant operations)
- Operations Mapping Officer (supports mapping for operations through liaison with planning unit)

Planning Unit

- Situations Officer (maintains a continual update on the status of fires for the information of the Planning Officer and develops the strategies and framework for suppressing them along with fallback strategies, encompassing all available operational, weather, resource and fire behaviour information.

- Mapping Officer (provides mapping support to the planning unit and operations, both field and SMT)
- Media (see below)
- Administrative Support
- Liaison Officer to NSW

Logistics Unit
- Logistic support (including the range of roles, such as transport, staging area management, communications, fuel, food etc.)

Other Support Roles

Dozers & Dozer Chasers

Both EACT and ACT Forests provided several dozer chasers for most of the days between 10 and 18 January 2003 to assist in the preparation of trails / control lines. Dozer chasers lead the dozers, making assessments about the best course for the trail based on operational requirements and environmental values. From about 11 January 2003 onward dozer chasers were mostly working 24 hours per day. ACT Forests provided three chasers for most of this period, while EACT provided chasers for approximately 50 shifts of 12 hours duration.

ACT Forests supplied dozers for use in relation to the fires from 8 January 2003. On the first day, a dozer was moved to undertake fire trail preparation in the upper Uriarra region. On the second day, dozers were brought to assist at the McIntyre's Hut fire. From day 3, ACT Forests provided three dozers in Bendora, with one going 24 hours. From that point onward there were generally three to four dozers working 24 hours per day. Other dozers were supplied by outside agencies (eg: Australian Defence Force).

Media
During the January 2003 fires, the media played a critical role in the provision of information to the public. Through the period from 9 to 20 January 2003, DUS staff undertook media functions, both under the direction of ESB and in relation to DUS specific tasks. Key functions included:
- Responding to media enquiries
- Attendance at and provision of media expertise during ESB planning meetings
- Preparation of ESB media releases and updates on the status of fires
- Assistance to ESB for media conferences
- Provision of public information needs, related to EACT's services and status of Parks and reserves.

Fire Injured Animals
In the immediate aftermath of the fires on January 2003, predetermined procedures for dealing with injured animals were implemented. Staff trained in these procedures, and qualified to undertake the humane destruction of stock and wildlife, were called upon. Key functions included:

- An injured animal incident centre was established and a team provided to respond to the injured animal crisis
- Co-ordination of assistance from outside vets for fieldwork
- Assessment teams (ranger, veterinarian, "spotter") were tasked to offer help to rural lessees in assessing stock and destroying badly injured animals. Ongoing liaison was provided.
- Assessment of suitable sites for animal pits

Canberra Connect
Canberra Connect assisted in the provision of public information during the emergency bushfire period by providing a single call number (132281) for public inquiries, as well as providing information on a website.

As bushfire conditions worsened, call centre personnel were advised of the increasing need for preparedness. On Friday 17 January, Canberra Connect was asked by the Executive Director, ESB to enact its Emergency Information Centre (EIC). From this time until Tuesday 28 January, the call centre operated as the EIC and was staffed for 24 hours a day, answering bushfire and recovery inquiries with information supplied by Emergency Services and other recovery agency personnel.

132281 escalated its scope to a national and international number in response to demand. In addition, Canberra Connect's Online team took control of the ESB website, and commenced publishing the ACT Bushfire Status website. Information was supplied by designated communications officers located at the ESB headquarters and the AFP's Operations Centre in Belconnen.

During the emergency period (18 to 28 January) over 52,000 calls were processed through 132281 (the equivalent of approximately three months' normal call volume). In addition, over 185,000 visits to the website were made, approximately 15 times the normal web traffic. To cope with the additional demand, over 160 government officers were rostered over three shifts through the call centre, online area and in supporting communication roles. Most of the staff rostered on at Canberra Connect were DUS personnel.

Recovery

The January 2003 fires impacted upon a large number of areas within the responsibility of DUS LMAs.

The response by EACT was initiated before the fires were extinguished. Early tasks included management of dogs and cats and other pets, patrolling nature parks, destroying or arranging care for injured animals, collecting and burying dead animals and contribution toward collection of green waste. A series of 17 separate taskforces were established to address wide ranging issues within the organisation including catchment and hydrological values, flora and fauna issues, impact on infrastructure, Human and Resource

Management, urban and rural issues, heritage issues and financial impacts. The work of these taskforces was consolidated into the current EACT Recovery Plan, which provides the policy, direction and strategic framework EACT will follow in the coming years. EACT staff also assisted in the early stages at the Lyons Recovery Centre. More than 30 staff were involved in the early recovery efforts from 20 to 22 January 2003. Environment Protection staff of EACT worked in 'buddy teams' with Health Protection Services, Workcover, BEPCON and ACT NoWaste on surveying fire damaged areas and taking integrated actions to ensure public and environmental safety.

PALM commenced a recovery role on the morning of 19 January 2003. Personnel from PALM co-ordinated the efforts to identify the property damage and the nature of damage to property. An hierarchy of objectives for this identification and the work to flow from it was put in place. A procedure for identification of the damage was recommended to other organisations. Approximately 30 staff were involved in a range of recovery activities in the early period until the end of January 2003.

CUPP, Cityscape, ACT Roads & ACT NOWaste were initially involved in road clearing, tree removal, clean-up of green waste and collection / disposal of spoilt food, demolition material and waste for burning. Approximately 60 staff were involved in these activities in the period until the end of January 2003.

ACT Forests has pursued recovery of its commercial product through arrangements for emergency felling of the burnt plantations. ACT Forests personnel have also been involved in recovery associated with loss of the ACT Forests headquarters during the January 2003 fires.

The whole-of-government submission to the this Inquiry about the recovery process details more extensively the recovery work undertaken by DUS.

Chapter Four

LEARNING AND IMPROVEMENT

There is no doubt that the confluence of events leading to the January 2003 fires was extraordinary. There is also no doubt, from the available evidence, that the preparedness of ACT Government agencies for the level of threat posed by more typical yet nonetheless severe fire seasons was adequate. It is also evident that the quality of the response of personnel of this Department, ESB and other agencies who were called upon during the fires was truly exceptional.

Nonetheless, and inevitably, there are lessons from the crisis. Completion of the learning process will require time for reflection and analysis on the part of all agencies and personnel involved. DUS personnel are still intensively engaged in the clean up, recovery and reinstatement phase. In addition, a number of senior DUS officers are 'off-line' to work full-time on whole-of-government recovery efforts, or undertaking higher duty roles within the Department. It will not be until the intensive recovery process is largely finished, and the findings and recommendations of the current inquiries are available to it, that the Department will be able collectively to distil a more complete picture of where and to what extent change may be indicated.

Nonetheless, through preliminary analysis and debriefing, it has become apparent that there are several areas where attention needs to be focussed and potential changes explored. Some of these areas are internal to DUS, and work is already underway on designing and implementing improvement.

Below is a discussion on the learning so far for this Department from the 2003 fires together with proposed improvements which have so far been identified for consideration. Readers are requested to keep in mind the comments in the introductory Overview to this submission.

It is also important to acknowledge that ESB and DUS have a history of working in close co-operation and have already had several meetings to discuss the kinds of issues enumerated below. In the absence of formal inquiries, these issues would be worked through in the normal course by the two agencies. Deadlines on submissions to this Inquiry have, simply as a matter of timing, prevented full resolution of all of the issues.

A. Legislation

Fire Suppression

The legislative regime for fire management in the ACT has developed over the past 65 years. There is complex interaction between the Bushfire Act, the Emergency Services Act and a number of other Acts including those relating to environmental protection and nature conservation. There is a large number of statutory and administrative bodies which have evolved to implement the legislative regime.

It is acknowledged that there is a single agency, ESB, which has control over fire suppression. This provides a number of advantages in a jurisdiction of the size and topography of the ACT. However, the overall fire regime also poses some potential risks which include the following:

- while each LMA is responsible for its land, it has no control over, or legislative responsibility for, fire suppression on that land. There is thus potential for the development of fire suppression planning and operations without reference to identified LMA objectives and land management polices, and the highly specialised knowledge of land managers in relation to the land for which they are responsible;
- while, in practice, LMAs provide a significant component of the ACTBS fire fighting resources, there is no legislative mandate for LMAs to undertake suppression or provide those fire suppression resources;
- there is ambiguity in reporting and structural arrangements for LMA personnel during suppression operations directed by ACTBS.

During the January 2003 fires, the legislative arrangement did not afford DUS land managers the opportunity to participate fully in the decision making processes for management of the fire event. There is clearly a tension between the obligations of the LMAs for management of their land and their inability to contribute fully to such an important facet of that management as fire suppression.

Proposed Improvement

While there is no suggestion that ESB should not continue to operate as the ACT's dedicated suppression agency, DUS is strongly of the view that it is imperative to build into the fire suppression framework a formal role for DUS land managers in fire suppression decision making at the highest level. A model which may be worth considering in this context is that in place in Victoria under the Emergency Management Act which provides the Chief Fire Officer in the relevant land agency with more authoritative responsibility for fire suppression, and indeed fuel management, on the land for which the agency is responsible. There are, however, other interstate models which might also be considered.

Role of the Bushfire Council

The Bushfire Act which establishes the BFC does not define that body's role. In section 5H, it sets out the powers of the Council which include taking "the action that it considers necessary to prevent or control the outbreak or spread of the fire". The role thus apparently contemplated for the BFC by the Act is an operational one. The BFC is comprised of volunteers appointed for their fire expertise. Notwithstanding the wording of the Act, it is not realistic to expect such a body to perform an operational role in fire management. In practice the Council has devolved its "operational" responsibilities to the Chief Fire Control Officer and the BFC itself operates in an advisory capacity only.

Proposed Change

The role of the BFC as an advisory body should be clarified in the Bushfire Act. It would also be useful if the Act were to clarify the relationship and interaction of the BFC with other bodies including ESB and the DUS LMAs.

B. Relationship and Interaction between Fire Management Bodies

Complexity

As set out in Chapter 2, there is a plethora of statutory and administrative bodies involved in fire management in the ACT. Few of these have formal links and information sharing is generally conducted via informal arrangements. There is potential for confusion as to roles and charters, duplication, and communication failure between them.

Proposed Improvement

The constitution of and relationship between these various fire management bodies would benefit from strategic review. There may be scope for rationalisation of some of these bodies and for formalising communication links between those which remain. Additionally, there is a case for reviewing the composition of some of the key bodies, including the Bushfire Fuel Management Committee. The Committee is currently chaired by an ESB representative but, given the responsibility of LMAs for management of public land, it may be more appropriate, while retaining the link with ESB, to appoint an LMA representative as chair on a rotating basis. This would facilitate more ownership of the planning and development of fuel management strategies by the relevant land managers.

Whole of DUS Fire Management Group

Because the Department of Urban Services is responsible for the management of nearly 75% of the ACT, it has a significant interest in, and focus on, fire management. Its land managers are committed to the actions they need to take in relation to fire planning, prevention and pre-suppression activities. As already noted, there is a large number of committees and groups involved in fire arrangements and the DUS LMAs work closely together in this structure. However, there is a case for DUS to adopt a more holistic approach to fire management issues within the Department, revisit its internal reporting arrangements and intensify the focus on fire issues.

Proposed improvements

A central fire unit within DUS is to be established. This unit will provide dedicated resources to co-ordinate centrally issues such as strategic planning, action planning, training, procurement of equipment, skills audit, database management and reporting.

C. Fire Fuel Management and Planning

Differing Land Tenures

Consistent with Glenn Taskforce recommendations, rural lessees are not currently required to prepare Fuel Management Plans for approval. However, Land management Agreements, required when a rural lease is renewed, provide for a mandatory land action plan covering bushfire risk management. Fuel management practices on Commonwealth land are also not integrated into ACT planning for fuel management. There are thus differing approaches to planning for fuel management across different tenures of land in the ACT. Fuel management planning ought to be undertaken in a consistent manner, providing cohesive strategies for fuel management across land management boundaries, while recognizing differing land uses.

Proposed Improvement

It is proposed that DUS will develop specific fire management guidelines for fuel and fire pre-suppression planning for incorporation into Land Management Agreements and that these will be required to be implemented as leases are renewed. These guidelines will be developed in consultation with rural lessees. In relation to Commonwealth land, the Glenn Taskforce recommended that an MOU be established with the Commonwealth covering fuel management practices. Efforts will be renewed to develop and implement such an MOU.

It is proposed that the ACT Government approach relevant Commonwealth bodies with a view to achieving a Memorandum of Understanding concerning fire management issues on Commonwealth land in the ACT.

Bushfire Fuel Management Plan

While the 2002/04 BFMP is a major advance on that applying in the previous period, further evolution will occur in response to the lessons learnt from January 2003. Areas identified for attention in the future development of the BFMP include:

- bushfire hazard assessment and categorisation of, and fuel management strategies for the urban interface taking account of input from key stakeholders including PALM;
- improved integration of rural lessee issues and Land Management Agreements into the Plan;
- improvements in mapping and delineation of Fuel Management Units;
- reinforcement of the current fuel management strategies in Namadgi National Park; and
- Commonwealth land.

It must be remembered, however, that there had been minimal opportunity to implement the 2002/04 Plan before the January 2003 fires were upon us. The 2002/04 BFMP incorporated significant changes from the previous Plans, the full effects of which have not yet been experienced. At this stage, the preliminary view of the Department is that the 2002/04 BFMP strikes a reasonable balance between water catchment, conservation and wilderness values on the one hand and fire control on the other. Nonetheless, the Department anticipates that the deliberations of the McLeod Inquiry and other inquiries will provide further guidance about fuel management which will inform changes to the Plan.

Reporting arrangements under the BFMP also need to be revisited. Under current arrangements, LMAs prepare separate reports to meet the legislative requirements of the Bushfire Act and the ACT Government output reporting system. This has led to inconsistency in the reporting of information between agencies and there has, as a consequence, been limited capacity for integrated executive overview of the reports to date.

Proposed Improvements

- Extensive review of the BFMP must be timed to allow account to be taken of the outcomes of the current inquiries into the events of January 2003 and related inquiries which have been launched in other jurisdictions. Further, proposed amendments to the Plan will need to be the subject of extensive public consultation and ministerial approval. It is therefore proposed that the current plan should be maintained for its intended life with the results of the extensive review process being incorporated into a new Plan
- DUS is currently considering options for improved internal communication processes and consistent reporting formats.

Fuel Management in the context of Strategic Fire Management

To be most effective, fire management planning needs to include elements covering fire prevention, fire preparedness and fire suppression, rather than focussing principally on fuel management. That planning should be consistent across all land tenures. Fire management includes planning, design, implementation and mapping for identification of key information including:

- Vehicle and heavy equipment access and egress points in forests;
- Fire fighting vehicle turn around and lay-by areas on single lane tracks;
- Fire control tracks;
- Fire breaks;
- Availability of water points for vehicles and helicopters;
- Access for remote area fire fighting teams;
- Helicopter landing sites for RAFT and other purposes;
- Emergency Meeting Points and an Emergency Evacuation Plan;
- Information on dormant trails; and
- Assets, cultural and heritage values.

Most of the necessary elements of such fire management plans are already prepared by each of the LMAs. During the January 2003 fires the information available from the recently prepared draft Namadgi Pre-suppression Plan (in map form) was important. Similarly, EACT found its Fire Action Plan to be a valuable tool to assist the suppression effort. There were nonetheless problems during the January 2003 fires with staff deployment without adequate knowledge of the surrounding areas on some occasions. There were times when NSW crews and also ACT crews were not familiar with the land area and were thus at greater risk. There were no emergency meeting points which would have provided well defined safety and evacuation zones.

Proposed Improvement

Preparation of a Strategic Fire Management Plan for all LMAs will be useful for future preparedness and fire suppression. The BFMP could be integrated into this broader Plan which would also include road and track design, fire break design and implementation and key mapped data crucial for safe fire suppression. There should be a particular focus on the design and maintenance of Emergency Meeting Points and development of Emergency Evacuation Plans. It is also proposed that LMAs will review their documentation for operational readiness for fire. This will include rosters and readiness details for personnel involved in fire fighting.

Clearance of vegetation beneath powerlines on unleased lands within the ACT.

The *Utilities Act 2000* is silent regarding responsibility for vegetation maintenance around power transmission lines on *unleased land* in the ACT .

Further, the Act does not specify a means of cost recovery when such works are undertaken on unleased lands. On leased land the *Utilities Act* makes vegetation clearance the leaseholders responsibility.

The lack of such legislative direction for unleased land has lead to an inconsistent approach to vegetation maintenance and uncertainty as to cost recovery processes. While there are no instances where lack of clearing has been known to cause increased fire risk, the present lack of consistency could result in a disjointed approach to unleased land tree clearance activities.

Proposed Improvement

The *South Australia Electricity Act 1996* provides a model which could ensure a consistent approach in the ACT. This Act provides for an electicity entity to be generally responsible for vegetation clearing under power lines. However, the electricity entity may enter into a vegetation clearance scheme with a council which gives the council responsibility for vegetation clearance on public land under powerlines carrying less than a specified voltage. DUS recommends that amendments to the *Utilities Act* in line with the South Australian model be considered.

Roads, Tracks and Fire Breaks

A good quality system of roads and tracks has been designed, built and maintained on land managed by ACT Forests as well as by EACT on Canberra Nature Park hills and ridges and on Canberra Urban Parks land, including along urban streamlines. The maintenance of forestry tracks has accorded with commercial requirements and with established fire hazard assessment criteria which have fostered concentration of fire management at the urban edge. As part of the 2002/04 BFMP, ACT Forests reviewed the location, extent and design of its fire break network. Work on maintenance of tracks and fire breaks was undertaken prior to and early in the 2002 fire season.

The effectiveness of road and track design and maintenance does, however, depend on the management of neighbouring land. This is why it is important to have consistent planning across all land tenures in the ACT and across the border.

Roads within Namadgi National Park have been managed in accordance with public expectations concerning the management of such land for its water catchment and conservation values. In January 2003, the lightning strikes started several fires in remote areas of the National Park. Access to the fires was provided along the established roads within and surrounding the Park. Most of the fires which started on 8 January 2003 were initially accessible via the established roads. Subsequently, however, much time was spent locating potential control lines and opening up suitable old tracks. A further challenge was the inability to “float” bulldozers very far along the Mount Franklin Road or into southern regions of the National Park.

Proposed Improvement

The work that commenced prior to the fires for development of the NNP Fire Management Plan continues. This includes consideration of fire access and trails, and must be undertaken in concert with similar reviews and activities in NSW. EACT has established a Road and Fire Trail Strategic Planning Group to examine the current and future requirements of the road and fire trail network. The work of this group will be incorporated into the NNP Fire Management Plan and NNP Pre-Suppression Plan. Issues specifically relevant to road design in conservation and wilderness areas will inform the work of the group. Some of the issues that will be considered include:

- the intensity of a road / trail network required for suppression and fuel management activities;
- the quality of roads and trails required for fire related activity;
- road and trail locations; and
- co-operative management with other LMAs, including those in NSW.

These issues are further discussed below.

Namadgi National Park

The NNP Plan sets out the important water catchment and conservation considerations which underpin management of the Park. The BFMP can only operate to the extent that it is consistent with the NNP Plan. The effect upon the conservation values of the National Park must be part of the planning process for fire management activities within the Park itself.

Proposed Improvement

Work is underway on the NNP Fire Management Plan which is expected to be completed next year. The Plan is intended to incorporate a strategic approach to the full range of fire management issues in the Park.

The sensitive issues raised in planning fire management activities within a conservation area are of course not unique to Namadgi National Park. The Australian Alps Heads of Agency meeting in April 2003 agreed to resolutions to consolidate existing scientific information on fire management in the Alps and provide an holistic approach to fire management between the responsible land management agencies in the different jurisdictions. Members of the Australian Alps Liaison Committee, will be invited to contribute to the strategic framework and policy development for the Namadgi Fire Management Plan.

Work currently underway for the development of this Plan includes:

- A road and fire trail strategic planning group which is examining current and future requirements for the NNP road and fire trail network. Relevant information is being shared with other land

management jurisdictions to enhance the effectiveness of the final Plan.

- The impacts of fire (including prescribed burning) on conservation of various vegetation types, specifically to record habitat change, is being monitored by specific projects.
- The draft Pre-suppression Plan is being developed for both NNP and Tidbinbilla Nature Reserve and will be updated annually.

Prescribed Burning

LMAs have a responsibility to reduce fuel hazards on their land and have generally undertaken significant and effective fuel reduction programs for urban interface fire management. As discussed in Chapter 2, when considering prescribed burning, there are several competing interests to balance including:

- the need to perform hazard reduction burns during suitable low fire hazard weather;
- legitimate environmental concerns arising from smoke and other risks associated with such burn activities; and
- polarised scientific opinion on the benefits and hazards associated with prescribed burning.

As a result of the administrative and statutory restrictions which have evolved from policy prescriptions, fuel management objectives and strategies have been difficult to achieve. Further, as noted earlier, changes in fuel management policies and practices which occurred following the 1995 Glenn Taskforce have not been applied consistently across Commonwealth land or rural leases in the ACT.

The difficulties associated with finding windows of opportunity to conduct burns, and the resourcing needs to conduct such burns in accordance with legislative requirements, have been discussed more fully in Chapter 2. Because of a significant level of community opposition to burning, it could be argued that the policy balance in relation to fuel management has swung more to protecting the amenity of Canberrans than their safety.

Proposed Improvement

The major considerations which have informed policy on prescribed burning in the past decade remain relevant. Changes to that policy will clearly be informed by the outcome of the various bushfire related inquiries currently underway.

Areas which will require attention include the following:

- Management of community expectations and concerns (including those of media and political leaders) regarding smoke haze and health issues;

- Promoting public awareness of the community safety benefits of conducting a prescribed burning regime;
- Implementing consistent approvals processes for prescribed burning for all LMAs. This might include:

  Development of guidelines for operational matters arising in relation to the conduct of burns. These could be applied in a similar way to those proposed above for smoke management guidelines. That is, a general authorisation might be provided to certain agencies for the purpose of undertaking burns within prescribed operational guidelines, obviating the need for individual permits from the CFCO for each burn program. It should be noted that this arrangement could be accommodated within the current statutory regime.

  The head of the proposed coordinating unit for fire management across DUS LMAs (referred to earlier) will be empowered to coordinate prescribed burn planning, design and implementation across all LMAs in accordance with guidelines prescribed by the EPA and the CFCO.
- Public notification arrangements for prescribed burns should be reviewed so that they might be standardised and streamlined.
- The legislative requirement for LMAs to have personnel present for 24 hours a day until a prescribed burn fire is completely extinguished should be reviewed. There should be capacity for a senior fire officer to approve periods when the fire may be left unattended.

D. Cross Border Issues

Fuel Management

The problems posed by fire management and hazard reduction across borders was discussed in Chapter 2 and earlier in this Chapter**.**

Following the January 2003 fires, the Australian Alps Liaison Committee has agreed to the development of a broad policy on fire management in the Alps and provision of a project officer to consider the impacts and extent of the January 2003 fires. There is significant opportunity to improve the level of cross border coordination for the development of strategic fuel management based upon rigorous hazard assessment and threat analysis, focussing on the threat of fires entering the ACT from the West and exiting from the East and South into NSW**.** Although it is acknowledged that the lease arrangement which previously existed to the West of the ACT border is no longer appropriate given the current tenure of the area as National Park or nature reserve, cooperative fuel management strategies must be developed for this area and the existing meeting fora should be formalised to address specifically fire management issues.

Proposed Improvement

The Australian Alps Liaison Committee is actively promoting a collaborative approach to the development of a broad fire management policy across the Australian Alps and the implementation of complementary fire management strategies with land management agencies in NSW and the Commonwealth. DUS will formalise meetings with NSW LMAs and fire authorities to provide for coordinated fuel management activities with NSW National Parks and Wildlife Service and private land holders in NSW to the south east of the ACT.

Fire Suppression

As noted under 'Operational Communications' later in this Chapter, during the January 2003 fires, NSW and ACT crews could not communicate using their radio communication systems. On a number of occasions the Incident Controller found it impossible to communicate with the NSW Divisional Commanders and this compromised his ability to discuss fire development and suppression strategies with them.

A frustration during the fire was the inability of ACT fire officers to contribute to the fire suppression strategy across the border or provide crews who could work independently of NSW crews in suppression efforts. NSW officers advised that ACT crews could only operate under the direct supervision of NSW officers. Given the huge demands on NSW resources caused by many other fires, there were insufficient NSW officers who could provide the experienced supervision (particularly in relation to backburning) required for effective fire suppression efforts by ACT crews on the NSW fires, while those ACT crews did themselves have this level of experience. This obviously restricted the ability of ACT officers to contribute to the suppression effort in NSW for fires threatening both ACT National Park and forest plantations. The obverse of this problem is that NSW crews are similarly restricted when attempting to assist suppression efforts within ACT borders.

Proposed Improvement

Formal intergovernmental arrangements to facilitate the sharing of fire suppression expertise and personnel across borders would seem indicated. Where fire suppression in one jurisdiction is likely to impact on another jurisdiction's assets, an arrangement is needed whereby the threatened jurisdiction's services (including command roles) can effectively be utilised across the border. It is acknowledged that this would likely require statutory change in both NSW and the ACT.

It has been widely acknowledged that the bushfire events which enveloped south eastern Australia in January 2003 were extraordinary and stretched to the limit the resources of the large jurisdictions of NSW and Victoria, as well as those of the ACT.

DUS personnel were deeply involved in many aspects of the suppression process, including direct combat and numerous support roles. Those personnel who were involved readily acknowledge the unprecedented nature of the January 2003 events, but nevertheless they consider that there are opportunities for improvement. What follows in the subsequent Sections E through to J is a distillation of observations and comments from those staff. It will also be appropriate for the Inquiry to discuss various issues with relevant DUS and JACS staff.

E. Suppression – Operational Issues

Fire Manual

The Rural Fire Control Manual underpins ACTBS suppression activities. The current Manual was prepared in 1992 and has not since been updated. Since then, significant changes relating to most aspects of the document have occurred, including advances in fire ground safety, structural arrangements, training and equipment. The document is relied on by the Parks and Forests Brigades of DUS, but its relevance in its current form is limited.

Proposed Improvement

The Fire Control Manual should be updated to reflect recent operations and changes.

Deployment of Personnel and Equipment

Senior Fire Fighting Officers (Group Officer and GCFCO) were not deployed to the fire ground until approximately the third day of the fire event in January. During the early period of the fire event, DUS brigades and staff filling other roles (incident management) were not fully deployed. Further, there was no deployment of crews or incident management over night until several days into the campaign.

Proposed Improvements

Immediate deployment of Senior Fire Fighting Officers to an unusual and remote fire event may be useful in the future. This would provide opportunities for improvement in the incident status reports, and on-the-

ground decision making during the crucial early phase of a large fire event including as to the level of response.

Use of Support Personnel

Given the extent of the January fires and the wide range of staff involved, many of whom had little previous experience in wild fires or emergency management, there was a need to establish effective control and administrative arrangements. Many aspects of the command structure worked effectively, such as fire injured animal procedures. However, other support units experienced difficulty in establishing clear reporting lines or avenues for passing on information. Some of the issues faced included the following:

- Neither DUS or ESB had a database showing details of the full range of staff skills and training which would assist with administration and within the Service Management Team (ie. non-fire fighting personnel). That is, ESB did not have available to it a skills database identifying sufficient information about personnel to permit development and implementation of rosters and procedures for the deployment of appropriately trained and experienced staff in key service management team roles (as distinct from fire combat roles);
- The emergency management procedures were not always clear to non fire-fighting staff;
- Administrative support was difficult mainly as a result of the size of the event and tracking difficulties. ESB was, understandably, not set up for the administrative burdens associated with such an unusual event;
- Inquiries from the public relating to the fires were not always directed to the right area and caused increased burdens on many of the different support units;
- As will be discussed later, media management arrangements evolved during the event. Liaison between the ESB operations room and DUS staff and other staff on media issues) did not always pass on information about progress of the fire.

Proposed Improvements

DUS agencies will develop and maintain a database of staff skills relevant to the requirements for emergency management. We will also seek the co-operation of the new Planning and Land Management Authority and the Land Development Agency (when they are established in mid 2003) but of course we are unable to pre-empt the decisions of the new Chief Executives of these agencies. This database will facilitate early identification of personnel who can assist with the event. The provision of administrative, media and other personnel should be covered in the MOU with ESB. DUS will liaise with ESB to develop and implement rosters and procedures for the deployment of appropriately trained personnel in SMT support roles to provide exposure and experience to staff in these roles and assist succession planning. It will also

be useful for ACTBS to develop appropriate resource tracking systems for personnel and equipment deployed to fires and fire related tasks.

Mapping

There was delay in ESB procuring high quality maps. DUS offered to make available its electronic mapping facility, but ESB ultimately procured the services of mapping consultants.

Proposed Improvement

ESB must have available to it at all times a high quality mapping system, the currency of which is ensured.

F. Operational Communications

Effective systems and planning for communications for any disaster or major emergency are fundamental to an effective response. The large number of people engaged in the management of such a crisis, whose usual responsibilities do not bring them into contact with the emergency services environment, require clear operating procedures and chains of command to permit an effect emergency response. The rapid sharing of information, both orally and through creation of data and documents, between different agencies during such a crisis is crucial. Further, the dissemination of information to the public in a timely manner during an emergency is also essential.

The following communications issues arose during the January 2003 fires:

Combat Communications

- Communications between personnel on the fire-ground and the ESB Communications Centre (ComCen) were difficult at times because the radios currently fitted to vehicles do not work in some of the more remote locations where the fires were fought.
- Communications between the fire-ground personnel and the ESB ComCen were also impeded because of the volume of traffic and its effect on ESB equipment – this was a problem caused by the scale of the event.
- Communications between ACT rural and urban fire services were difficult because it involves the use of two radio frequencies. Similarly, communications between ACT and NSW fire services on the fire ground were difficult because the radio systems used by each jurisdiction are incompatible.
- Communications between the planning and operational staff in ESB and other relevant organisations (for example, the weather bureau) were difficult because there was no fax machine or phone dedicated to planning, logistics and operations – media staff were using the same equipment to achieve vital public communications

as outlined below. This is an example of operational requirements requiring early action.

- The layout of the ESB building is not conducive to rapid communications within ESB – staff in the planning unit were located away from the operations unit and this physical separation delayed information sharing. Further, the planning unit was outside of the secure part of the premises and its location became something of a thoroughfare creating distractions and causing difficulties with concentration. Conversely, there were many people present at Curtin who had no formal ICS role . While these people had other important roles, it would have been beneficial to locate them outside of the ICS environment, as occurs at police command headquarters during any crisis. This is discussed more fully below under 'ICS'.
- The two emergency headquarters – AFP and ESB, - were not co-located, thus further delaying or impeding communications and information sharing.

Public Communications

- Media liaison was problematic. The premises and facilities were not set up for a large media presence and the provision of support to ESB on media matters was an evolving process throughout the fire crisis.
- As at 18 January, the lack of established communications roles and procedures was an initial impediment to the effective provision of public information.
- DUS rapidly expanded its call centre to provide a 24 hour, 7 day service from 17 January, calling in a wide range of willing staff. Similarly, DUS provided media support at very short notice. However, it is acknowledged that staff providing information to the community via Canberra Connect channels (call centre and web), and those providing media support, were not trained in emergency response procedures. The flow of information improved as procedures were developed, rather than there being any effective public information plan.
- Canberra Connect needed access to a secure site with emergency power and appropriate operational support personnel.
- There was not always a simple clear message to the public about the issue of evacuation from properties in danger. This appears to stem from different philosophies of Police (on the one hand) and Emergency Services (on the other). This situation is not unique to the ACT, but it did mean that some of the external communications (through Canberra Connect and the media) was not completely clear.

Proposed improvements

Significant improvement in communications for future disasters would require significant budget appropriation. There is obviously a need to balance the cost of enhancement seen as necessary to accommodate another

extraordinary and unusual catastrophe against competing community needs. Ideally, planning for communications enhancements will take into account the desirability of the following:

- compatibility between equipment used in NSW, Victoria and the ACT;
- equipment which can communicate from very remote locations;
- provision of equipment which can be dedicated to particular tasks rather than having limited equipment shared across a range of tasks;
- the housing of ESB in purpose built premises, or a substantial 'make-over' of the existing premises at Curtin;
- the provision of a secure site with emergency power for Canberra Connect.

However, there are a number of relatively low budget improvements which are strongly recommended prior to the next fire season. These include:

- development of better protocols for information sharing between ESB and other agencies including Canberra Connect and AFP headquarters;
- development of a formal public communications plan as part of the Emergency Management Plan, incorporating information direct to the community through the Emergency Information Centre role of Canberra Connect information channels and to the media. Canberra Connect senior managers need to be involved in establishing appropriate procedures;
- the public messages about evacuation (or not) should be fully debated and agreed between Police and Emergency Services for a range of possible scenarios. These messages should then be widely disseminated and particularly at the start of each fire season.

G. Incident Control System

As noted in Chapter 3, the Australasian Fire Authorities Council (AFAC) has produced a formal structure for incident control known as the AIIMS Incident Control System for managing fire suppression operations. It has been implemented across Australia, although in a modified form in the ACT.

During the January 2003 fire response, a range of ICS issues arose. From the viewpoint of the DUS senior officers involved these issues centered around:

a. Blurring of the roles of CFCO/SMT (on the one hand) and the Incident Controller (on the other hand);
b. Strategic decisions and resource deployments initiated by the SMT without reference to the Incident Controller;
c. The Incident Controller did not receive strategic information directly from an IMT;

d. Written Incident Action Plans not always supplied to the Incident Controller (including on January 18);
e. Shortage of trained/experienced personnel for IMT roles, and lack of overnight planning function;
f. Delayed communication to the Incident Controller about the state of emergency declaration;
g. Crews not always supplied with maps or sector deployment orders;
h. Planning staff did not receive direct input from operational staff;
i. Inappropriate changeover times for the Incident Management Team.
j. Inadequate linkages between the ICS operation and public communications.

Given the rapidly unfolding events of January 18, it is appreciated that there may be other perspectives on these issues. It is also noted that in normal circumstances these issues may have been capable of resolution through the post-event debriefing and negotiation process which normally occurs between ESB and DUS. It has not yet been possible for this to occur but it is essential that these issues be fully clarified before the next fire season. Accordingly we are suggesting a way forward which resolves these issues as part of the current inquiry. This approach is outlined below under Proposed Actions and Improvements.

In addition to the above issues, impediments to communication flows and information sharing have been referred to earlier under 'Operational Communications'. There is a view that the structure for Incident Management envisaged by the AIIMS ICS became eroded to an extent. For example, the focus of morning Incident Management Team briefings became diffuse because attendance at the meetings was not restricted to those personnel who had a formal role in the ICS structure. Apart from dealing with the relatively narrow focus of incident command, the briefings were also utilized to exchange a wide range of other information, especially focusing on information to the public. As a consequence (and perhaps inadvertently) the important operational focus was not always to the fore.

This situation is in contrast to the 'discipline' at police operational command centres during emergencies and exercises, which effectively creates a 'bubble' around the operations command to enable it to focus intensively and strategically on managing the emergency. The lack of such quarantining during January 2003 may have arisen not only through lack of comparable previous experience, but also because the visible command structure and powers which patently characterise police operations are not so clearly perceived or understood in relation to emergency services structures by those outside them.

Proposed Actions and Improvements

As a key step to resolving the concerns about the operations of the ICS it is strongly recommended that (as part of the subject inquiry) a workshop process be convened to "flush out" all aspects of the ICS issues outlined under a. to j. above. Such a workshop should be conducted by a person well-

experienced in the ICS process, and who themselves has been part of major emergency management events; participants must include relevant DUS officers as well as representatives of other emergency services.

Such a workshop may lead to inquiry recommendations, but at this stage it is the view of DUS that full implementation of the standard approach to AIIMS ICS would be useful.

There is also a need for the planning of large scale exercises, involving not only the activation of the ICS and the various Brigades, but also engaging government policy advisers and Ministers and their staff, to engender broad understanding of the appropriate roles of all players in a major emergency. The benefit of such exercises includes the presence of 'referees' who audit progress and debrief players for further learning and improvement. Major exercises are conducted regularly, involving the AFP, State police forces, government policy advisers, Federal and State politicians and the ADF, under the National Anti-Terrorist Plan. The involvement of emergency services in these exercises has generally been limited, because the focus has tended to be on police and ADF containment and resolution of the crisis rather than emergency services response. However, the scale of these exercises is an enormously useful learning tool, and it would be useful if, either through the National Counter Terrorism Committee, or through Emergency Services Australia, a series of large scale exercises could be planned which had their principal focus as emergency services response. There has been one useful recent test of emergency arrangements– a national simulation of a foot and mouth disease outbreak (*Exercise Minotaur*) – in which the ACT participated, but the nature of such an exercise requires a considerably different response to that required by a large scale fire emergency or a terrorist attack.

H. Occupational Health and Safety (OHS)

The OHS outcomes from the January 2003 fires were generally pleasing. It was a major fire event with extraordinarily dangerous conditions faced by fire-fighters. There were thankfully no major injuries.

The major OHS issue for DUS under existing arrangements is that ESB does not have a consistent system for the tracking of deployed resources. It had been assumed that the location for deployment, shifts worked and functions of staff would be tracked by ESB as part of the Incident Control System. However, in a large fire event this becomes extremely difficult and time intensive.

During the January 2003 fire, DUS agencies did attempt to track the movements of staff. LMAs were actively developing rosters.

Significant issues arose in the tracking and scheduling of resources as a result of operational decisions made by the Incident Controllers on the fire-ground, and the Service Management Team at ESB. Crews were often kept

beyond the anticipated shift times by up to 5 hours. This meant rescheduling and rostering to provide firefighters with appropriate rest breaks. The problem was exacerbated by the timing of requests from ESB for resources – often these requests were provided close to shift changeover times, resulting in difficulties in selecting and contacting staff and having them available at the required time.

DUS and ESB share the responsibility to ensure the safety and welfare of employees. This creates an environment with potential for conflict on OHS issues where DUS and ESB disagree on issues such as shift length or safety of a particular fire fighting method for employees.

Proposed Improvements

Irrespective of any tracking and deployment system that ESB may provide, the duty of care of DUS for its employees, and the wide range of non fire-fighting roles its employees may be involved in during an emergency situation, will require the development of a tracking system for future emergencies. DUS will pursue development of such a system (through its proposed Fire Management Unit).

The MOU will require amendment to reflect the important ongoing responsibilities of DUS to its employees and the need for ESB to provide relevant information about crew deployment to the DUS staff involved in monitoring employee welfare issues.

I. Equipment

Tankers

ESB provides tankers and light units for use by the Brigades during fire-fighting efforts. ESB has an equipment replacement program in place. Current tanker capacity is 6000 litres and this seems adequate. Most forest fire-fighting is undertaken in remote areas and there are often limited locations for obtaining water (as was the case at the recent Bendora Complex). Fire suppression in forest areas requires the delivery of large volumes of water for a sustained period. There is a risk, if tanker capacity is too small, that the vehicles will run out of water at times too close to each other, causing interruption to the suppression efforts.

When there are multiple fires, the limited number of heavy tankers available restricts the operation of the DUS Brigades. The recent fire experiences, in 2001 and 2003, raise the question of whether 5 large tankers between the two DUS Brigades are sufficient for the future.

Proposed Improvement

For the benefit of both ESB and the effective operation of the DUS Brigades, it would be useful if a strategic review of equipment needs was undertaken. The review would determine the appropriate number of vehicles (and their tank capacity) required by the Brigades.

Equipment Audit

Comprehensive resource lists were developed by EACT in late 2002 for the supply of equipment to Brigade and Group Officers. This is intended to provide for regular replacement of equipment to a set standard, and to ensure that all officers are fully equipped.

Proposed Improvement

Development of comprehensive resource lists will be extended to the requirements of all firefighters before the commencement of the 2003/04 fire season.

J. Training

The nature of fires in the ACT in a normal season, the lack of prescribed burning experience, and the fact that there is little firefighting in remote areas of dense forest results in a low level of fire-ground and incident management experience in major fires.

Some of the specific training issues highlighted by the events of January 2003 include:

a) Implementation of prescribed burning plays a crucial secondary role in developing fire management competencies for fire-fighters. In an environment where there is limited prescribed burning, and when in most years wildfires are contained at small sizes, there is no opportunity for most forest fire-fighters to gain the important competencies related to the use of fire to control wildfire. These techniques are important when undertaking back burning operations for fire suppression.

   Proposed Improvement

   If the opportunities for prescribed burning in the ACT are to remain at similar levels as the past several years, it will be beneficial for fire-fighters to be offered the opportunity to participate in interstate prescribed burn operations in autumn. Liaison with interstate agencies will be undertaken to determine if there are opportunities for such an arrangement.

b) ESB set a target for completion of training for national competencies for fire-fighters (ie: the basic and advanced levels) by the end of September 2003. The level one and two competencies (basic and advanced fire-fighter) can only be implemented by DUS after completion of training modules and assessment tools by ESB. Most of the competencies are not yet available for presentation and assessment in the ACT. It is unlikely, therefore, that the very desirable goal of completion of those national competencies will be achieved by the end of September 2003.

Proposed Improvement

ESB and DUS will need to work co-operatively to ensure the earliest possible completion of the training modules. In the meantime, to avoid any confusion about the competencies of DUS personnel, the MOU should be amended to reflect current training levels.

c) One of the difficulties experienced by DUS during the January 2003 fire was identifying staff with appropriate non fire-fighting skills (administrative, dozer chasers, telephone call centre, injured animals, logistics and planning). Skills analysis and preparation of a skills database has proved helpful for agencies which have undertaken this work. It identifies requirements for increased training and permits consideration of the mix of skills available to an organisation when any recruitment process is underway

Proposed Improvements

Continued and refined skills analysis and its incorporation into a centralised database will be important to the future development of programs for targeted training outside the general competency based training. It will also permit succession planning. It will be important to identify areas where skills are likely to be lost within the next several years so that early attention to development of skills and knowledge in the relevant areas can be addressed. The importance of fire management and suppression issues can be appropriately emphasised during recruitment of senior land managers. Further, a skills database ought to include fire and related non-operational skills. This would incorporate the range of tasks which were required to be provided to ESB during the January 2003 fires.

DUS has commenced the skills analysis process. A detailed database and preparation of the information in useful forms is in progress.

d) It is acknowledged that, for an event of the magnitude of the January 2003 fires, it was apparent that the majority of DUS staff had limited experience with Level 3 IMT roles. However, out of necessity and at the direction of ESB, five officers filled Level 3 IMT roles as requested by ESB. Those staff had undergone the required ICS / IMT training in October/November

2002, but had very little exposure to the full implementation of the Incident Management System applied by ESB. This factor, and the likely loss of senior fire officers in the next few years, has the potential to create difficulty in filling senior fire-fighting roles.

Proposed Improvements

In order to build on the experience gained during the December 2001 and January 2003 fires, DUS will approach interstate agencies seeking opportunities for ACT personnel to participate in interstate fire events. It would be helpful for preparation for future large fire events, if a regular program for interstate fire experience (for firefighters, incident management officers, incident management staff, liaison officers, aircraft operations and plant operations staff) were provided. However, the opportunities for such a program will need to be explored with the interstate agencies before it is clear whether this can provide a suitable means for increasing the range and depth of fire skills in the ACT. This is a matter which can be progressed through the Fire Control Officers Group at the national level.

e) During the January 2003 fires there were limited staff available with the skills to undertake aerial observation and assessment of the fires.

Proposed Improvement
More training should be planned for personnel to fill the various aircraft management roles necessary to manage aircraft operations in the ACT effectively during such events.

K. Urban Planning

Nature Strips

Examination of the Urban edge at Duffy during 2002 identified high fuel loads on the nature strips as a result of plantings and other activities by residents. However, the nature strip plantings were found to comply with current guidelines and CUPP was therefore not in a position to remove or restrain such plantings.

Initial advisory material on issues such as vegetation maintenance were produced in February 2003 to inform the bushfire recovery process. Yet further learning from the January bushfire experience may lead to further review and refinement of the current policies and advice.

Proposed Improvement

Public debate concerning the effects of high fuel loads on nature strips, balanced against the community interest in enjoyment of the natural environment close to homes, will be helpful to inform review of the guidelines for nature strip plantings and maintenance on the urban interface.

Forests at the Urban Edge

The January 2003 fires have highlighted a need for reconsideration of the issues surrounding vegetation and other planning matters at the urban edge.

Proposed Improvements

Thorough scientific analysis is required concerning the relative intensities of fires emerging from native forest, pine plantation and grassland in the urban interface, and the impact of each of these vegetation types on direct house losses. Such an analysis will permit the community to consider in an informed way the impact of fire in plantations. Revisions to forest set back distances should apply to both eucalypt and pine forests. An integrated strategic planning process for making these decisions is now in place incorporating an ACT Forests Business Study, Recreation Strategy, Urban Edge Review, and importantly a Non Urban Land Use Study. These studies which respond to the immediate post bushfire challenges will ultimately feed into a current Canberra Spatial Plan process for the ACT.

A flow chart indicating the relationship of these studies is at Annexure 29.

Urban Edge Planning Framework

PALM's strategic planning system for urban development has provided an effective framework for consideration of planning issues and integration of fire hazard factors into the urban edge design Typically bushfire threat is assessed at several stages of the planning process. The planning process broadly provides for consideration of the land use and land management, and applies appropriate planning controls. Where necessary, environmental impact study, preliminary assessment, or separate study is undertaken if the threat is significant. Ultimately, the diverse nature of the environment surrounding the ACT requires a case by case assessment of bushfire threat.

Early fire hazard assessment is important to ensure the most appropriate urban edge is established. The BFMP is a key tool in the urban edge planning assessment process. The BFMP provides a detailed assessment of the existing fire hazards in the non-urban areas of the ACT, and in particular those areas at the urban interface which present a fire risk. The BFMP also contains the management strategies for these areas.

Proposed Improvement

All LMA's need to take a role in planning for the urban edge of Canberra. Each of these agencies has particular responsibilities, knowledge and skills that can contribute to ensure the best outcomes for future planning in the ACT.

PALM is coordinating an Urban Edge Review. The Review will encompass planning policy, design guidelines and management systems for Canberra's

existing urban edges and those which are still to be constructed. The Review will address the issue of Bushfire Prone Areas in the ACT (urban and rural) and whether those or other more appropriate management measures may be warranted. Initial analysis of current information and research indicates that a broad scale declaration of a bushfire prone area throughout Canberra urban areas is not appropriate. Declaration of a bushfire prone area has a significant impact on building requirements.

The Urban Edge Review will consider existing guidelines and management plans such as the BFMP and Urban Edge Guidelines. The urban edge planning process will require effective and open communication between the key stakeholders, such and the ESB and EACT, who will be engaged through each stage of the Urban Edge Review.

Bushfire and the Canberra Spatial Plan

A new Plan for the long term strategic development of Canberra is being prepared. The Canberra Spatial Plan will provide opportunities for consideration of bushfire issues within the document that will help shape the future of Canberra. It will consider a range of issues including urban form, environment, land use and infrastructure.
The outcomes of the Urban Edge Review, and the Non Urban Land Study, in particular, are very important strategic inputs to the Canberra Spatial Plan. They will provide the basis for resolving appropriate and compatible non-urban land uses balanced within the context of Canberra's strategic development requirements.

Proposed Improvements

The phenomenon of natural disaster, including bushfire, is being considered by PALM as part of the work for the Spatial Plan. PALM is working closely with ESB and other Agencies to develop the Spatial Plan. The Spatial Plan provides an appropriate vehicle to reinforce consideration of bushfire risk as a mandatory consideration in planning, particularly at the urban edge.

L. Community Education

Canberra is the "bush Capital" which offers its residents high quality urban amenity, environmental and landscape benefits which are second to none. However, being the 'Bush Capital" comes with the added responsibilities, not just for planners, land managers and emergency services, but also local residents with respect to site planning on private blocks, on-site management and fire suppression. This is particularly pertinent for residents with properties abutting or near parks, reserves and open spaces. Unless private properties are managed taking into account fuel management issues*, these properties are likely to be exposed to a significant risk even where there is appropriate management of government land.*

Education/awareness programs have been undertaken but unfortunately, *such programs often* go unheeded.

Proposed Improvement

DUS will liaise with ESB, particularly with respect to properties abutting parks reserves and open spaces, to undertake an assessment of previous community education/awareness programs and develop new programs aimed at fostering greater community partnership in fire management.

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