ANNEXURE C – MINIMAL IMPACT SUPPRESSION GUIDELINES

Management of Bush Fire Operations

Bush fires and bush fire operations have the potential to cause widespread, long-lasting, and irreversible environmental impacts. Despite the defences available under various environmental legislation to prosecution for 'emergency firefighting', there is nevertheless an obligation under the *Rural Fires Act 1997* for fire fighting authorities to apply the principles of ecologically sustainable development to the suppression of bush fires. *BFCC Policy 02/2003 Ecologically Sustainable Development* also refers to the Bush Fire Coordinating Committee's commitment to ensuring the principles of Ecologically Sustainable Development underpins decision-making processes.

These guidelines are intended to address this obligation and to assist in minimising environmental impacts. The table below outlines broad categories of environmental values, together with potential impacts and both response and recovery actions that can be taken to minimise those impacts. The right side of the tables outlines some potential results of suppression activities and corresponding rehabilitation options to be considered.

	Minimal Impact	Rehabilitation	
Activity	**Minimising factors** (to be considered before and during construction/use)	**Results of suppression activities**	**Potential rehabilitation operations**
Use of existing trails/control lines	When using existing trails/lines, minimise the volume of traffic using the lines and ensure inappropriate vehicles/ equipment do not use the lines (e.g., heavy machinery on load limited bridges) Assess drainage structures and pavement condition to ensure functionality.	Trail to be maintained.	Restrict access. Leave trail open.
		Bulldust present.	Remove, redistribute or water bulldust. Restrict access to area and enable area to settle naturally. Ensure silt movement is managed.
		Damaged road surface.	Repair as needed, consult road manager.
		Damaged drainage structures.	Repair as required, consult road manager.

New trails/control lines constructed	When selecting appropriate line and implementing trail or control lines, minimise: • soil disturbance: if the blade does not have to disturb the soil, keep it off the ground (e.g., access only required), • line not adequately drained during construction (depends on urgency), • length within steep slopes, including side slop, • length within dispersible soils in potentially high rainfall areas, • length within close proximity to drainage features, • amount of catchment above trail, • disturbance to threatened species/cultural heritage/natural features, • not using previously/naturally cleared areas, • work carried out by inexperienced and non-trained personnel, • work carried out by inappropriate machinery, and • work carried out in wet weather.	Poorly drained trails/control lines (erosion potential).	Install appropriate drainage.
		Unwanted trails/control lines.	Restrict/close access and rehabilitate as required by land manager.
		Trail to be maintained. Where this occurs the FAFT Plan should be updated accordingly.	Restrict access. Leave trail open.
		Bulldust present.	Remove, redistribute or water bulldust. Restrict access to area and enable area to settle naturally.
		Damaged road surface.	Ensure silt movement is managed. Repair as needed, consult road manager.
		Damaged drainage structures.	Repair as required, consult road manager.
Trails/control lines re-opened	Before re-opening trails, consider factors above and evaluate whether creating a new realigned trail would have less impact. When re-opening trails minimise: • soil disturbance: if the blade does not have to disturb the soil, keep it off the ground (e.g. access only required), • line not adequately drained during construction (depends on urgency), • disturbance to threatened species/cultural heritage/natural features, • not using previously/naturally cleared areas, • work carried out by inexperienced and non-trained personnel, • work carried out by inappropriate machinery, and • work carried out in wet weather.	Poorly drained trails/control lines (erosion potential).	Install appropriate drainage.
		Unwanted trails/control lines.	Restrict/close access and rehabilitate as required by land manager.
		Trail to be maintained.	Restrict access. Leave trail open.
		Bulldust present.	Remove, redistribute or water bulldust. Restrict access to area and enable area to settle naturally.
		Damaged road surface.	Ensure silt movement is managed. Repair as needed, consult road manager.
		Damaged drainage structures.	Repair as required, consult road manager.

New helipads constructed	When selecting appropriate locations for, and using, new helipads, minimise: • vegetation removal, • soil disturbance: if the blade does not have to disturb the soil, keep it off the ground (e.g. access only required), • areas not adequately drained during construction (depends on urgency), • locating in dispersible soils in potentially high rain fall areas, • areas within close proximity to drainage features, • disturbance to threatened species/cultural heritage/natural features, • not using previously/naturally cleared areas, • work carried out by inexperienced and non-trained personnel, • work carried out by inappropriate machinery, • work carried out in wet weather, • areas where visibility/aesthetics is an issue, and • areas where sensitive animals/communities are present (e.g. evaluate noise pollution issues).	Helipad to be maintained.	Ensure appropriate drainage features are in place. Remove rubbish. Restrict access if required.
		Unwanted helipad.	Close and land manager rehabilitate as required.
Re-opening of old helipads	Before re-opening helipads, consider factors above and evaluate whether creating a new helipad would have less impact. When re-opening old helipads minimise: • vegetation removal, • soil disturbance: if the blade does not have to disturb the soil, keep it off the ground (e.g. access only required), • areas not adequately drained during construction (depends on urgency), • disturbance to threatened species/cultural heritage/natural features, • work carried out by inexperienced and non-trained personnel, • work carried out by inappropriate machinery, and • work carried out in wet weather.	Helipad to be maintained.	Ensure appropriate drainage features are in place. Remove rubbish. Restrict access if required.
		Unwanted helipad.	Close and land manager rehabilitate as required.

Helicopters	Noise pollution and rotor wash are the main detrimental concerns when using helicopters for fire suppression. In order to reduce these impacts minimise: • unnecessary low flying over populated areas or areas where sensitive animals are present (e.g. horses, ostriches), • unnecessary low flying over control lines or personnel and equipment, where embers and branches may be blown about by rotor wash, • Consider noise pollution issues when locating heli-bases and consult neighbours where appropriate, and • Consult experienced and trained aircraft personnel.	N/A	N/A
Staging Area, Assembly Area, Control Points	When creating or using areas for Staging Areas (SA), Assembly Areas (AA) or Control Points (CP's) minimise: • soil disturbance: if bare earth is not required maintain some vegetation cover, • areas not adequately drained, • use of areas with dispersible soils in potentially high rainfall areas, • use of areas within close proximity to drainage features, • disturbance to threatened species/cultural heritage/natural features, • not using previously/naturally cleared areas, • work carried out by inexperienced and non-trained personnel, • work carried out by inappropriate machinery, and • work carried out in wet weather. It must be realised that traffic flows, (including timing, size of equipment and regularity) create noise pollution and congestion. Appropriate access and traffic control is required.	Area with vegetation removed and unwanted clearing	Close and land manager to rehabilitate area as required. Ensure appropriate drainage features are in place. Remove rubbish
		Areas to be maintained for future SA, AA or CP's	Remove rubbish. Ensure appropriate drainage features are in place. See appropriate areas to establish ground cover. Consult landowner.

Back burning and burning out operations	Back burning is implemented as an indirect attack option, usually to contain a moderate to high intensity wildfire and limiting its spread. To minimise the impact of back burning, the options of doing or not doing the back burn need to be considered. Burning out, on the other hand, is where islands of unburnt fuel between a control line and a low intensity fire edge (or dead edge) are "burnt out". When considering these options minimise impacts by: • ensuring experience fire personnel are involved in the decision to carry out these operations, • ensuring the back burning or burning out operations are undertaken under the guidance of experienced fire personnel, and • ensuring weather conditions and proposed lighting techniques are appropriate. Note *RFS Operational Protocol 1.2.20 for Backburning* must also be taken into account	Inappropriately hot back burn.	Note and monitor.
Non-active suppression (monitoring fire and allowing to burn within a defined area)	This option may be appropriate where: 1. the current and predicted fire behaviour is within set limits and it is considered less impact to let the fire burn out to existing control lines, rather than constructing new control lines, 2. the predicted weather may reduce the fire intensity or extinguish the fire, 3. the fire is burning in accessible country. To minimise the impact of this suppression option, the predicted weather (hence fire behaviour) needs to be favourable and the interim damage to social and environmental assets needs to be evaluated.	Large fire area.	Monitor.

Use of retardant, foam, salt water	Due to the non-endemic chemical and surfactant nature of these products, avoid using in close proximity to drainage features, water bodies and wetlands.	Drainage features, water body or wetland with retardant, foam or salt water drops within.	Note and monitor.

- When considering minimal impact techniques, special consideration should be given to avoidance of sensitive areas such as Cultural and European Heritage areas, Social Assets and Environmental Assets. Where these issues are in areas to be considered for suppression, avoidance is best, minimal disturbance is less optimal. Please consult experienced people for advice where appropriate.
- Vehicle/plant/equipment hygiene is also important in fire suppression. Vehicles need to be cleaned when being moved in and out of known infected areas. This information needs to be provided to operators at an incident.