Bushfire Management Plan

Hospital Hill Reserve, Bowen

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1. Introduction

Bushfire management is an important issue for most rural communities in Australia. The latest bushfire hazard map (June 2008) from Queensland Fire & Rescue Services (QFRS) provides a preliminary indication of the bushfire hazard for the Whitsunday region. This map can be used to assess the bushfire risk for local areas and identify the communities most at risk of serious injury or death. This risk once identified can be used to guide the mitigation strategies Council and other stakeholders can implement through their Bushfire Management planning.

Hospital Hill has been identified as a site at risk of uncontrolled wildfires due to vegetation type, slope and aspect. The potential for loss of life and/or property could be high if the hazard is not managed appropriately.

Hospital Hill reserve is located in Bowen and is comprised of private land, Council reserves and Unallocated State Land. The Council reserve covers approximately 9.6ha and is surrounded by residential development (Figure 1).

Figure 1. Hospital Hill in the centre of Bowen Township.

The purpose of this Bushfire Management Plan is to identify the actions required to reduce bushfire hazard in the Hospital hill reserve. The objectives of this plan include;

- Identify where fire lines are required to protect life and property from fire,
- Maintain an ecologically appropriate controlled burn program
- Improve community awareness, involvement and liaison,
- Improve coordination with adjoining landowners,
- Implement a maintenance program to reduce bushfire hazard and risk

It is envisaged that this Plan will be used as a communication tool to let stakeholders and the community know how the Bushfire hazard on Hospital hill reserve will be managed.

2. Background

2.1 Legislation

There is a legislative requirement under common Law and the Fire Services Act 1990 for Local Government as owners and occupiers of land to prevent fires escaping from their land and damaging property (Tran and Peacock, 2002). Councils have an obligation to manage their land responsibly to prevent the loss of life or property and reduce the 'human' impacts of bushfires. Council is also required however to achieve this and still maintain their obligations under other legislation. Obligations under the Nature Conservation Act 1992 for example require local authorities to protect and conserve rare or threatened species, biodiversity and ecological processes. The challenge for Council is to deliver management actions which will protect and conserve simultaneously.

2.2 Site Description

The Hospital Hill reserve is comprises of Council land (Lot 14SP212227 – 7.5ha) and State Land (Lot 53 on AP17193 and Lot 16 on B66103 – 2.1ha). The reserve is comprised of a small granite hill with scattered boulders and outcrops. The vegetation is composed of native and exotic grasses, sparse shrub layer and scattered small trees. The biodiversity values of the site are considered low given the numbers of domestic dogs and cats which occur in adjacent areas and information gathered from vegetation inspections.

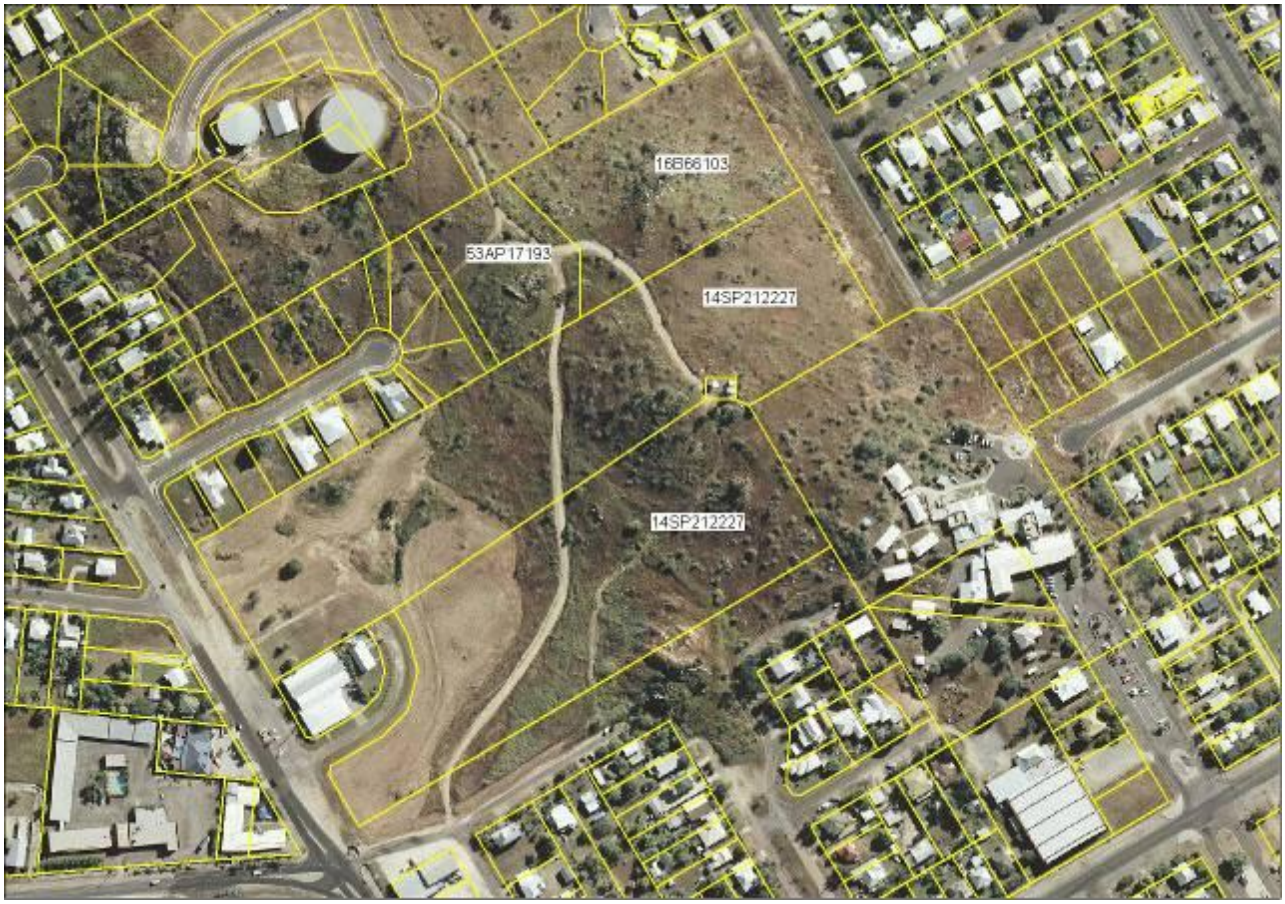

Figure 3. Lots associated with Hospital Hill reserve.

3. Bushfire hazard rating

The first step in achieving this balance between protection and conservation is to assess the bushfire hazard at a site and threat potential. This threat potential is based on the overall site specific bushfire hazard rating which is assessed based on the cumulative calculation of each of the five (5) main landscape characters. The bushfire hazard rating is determined using the scheme in the State Planning Policy 1/03 for bushfire hazard. The main landscape characters used in the assessment are:

- Vegetation
- Land use
- Slope
- Aspect
- Fire History

Table 1. Bushfire Risk Factor for Management Area

Bushfire Risk Factor	Description	Hazard Rating
Slope	Steep Hills (>10% to 20%). (SPP 1/03 2003)	4
Aspect	North to East some western slopes	3
Vegetation	Ungrazed grassland and open woodlands	5
Total		12

The bushfire hazard rating using the SPP1/03 scheme is “12” which is a “medium-high” bushfire risk. The land use of site is a vacant lot which is ungrazed without any defined management plan. The land use adjacent to the reserve is residential. In 2008, an uncontrolled fire occurred in the reserve which threatened nearby residential areas.

4. Management Plan

4.1 Bushfire mitigation strategies

4.1.1 Fuel reduction

Fuel, oxygen and heat are the three main ingredients of fire. The type and amount of fuel can influence the character of a fire. If the accumulation of organic flammable material is not present on the ground or in the shrub and tree layer, a fire will be difficult to start. The dumping of green waste in the Hospital hill reserve from residential areas increases the fuel load in the reserve.

The method of back-burning can be used to reduce fuel loads. Back burning is the technique of intentionally lighting fires to reduce fuel loads in a managed way. If fuel loads are not present in sufficient quantities, a back burning operation will fail. The back burning operations will require an estimate of fuel loads prior to burning operation and a determination of whether a cool low intensity burn or a hot burn is desired or expected under the climatic conditions. Most back burning operations aim for low intensity (cool) fire to reduce the risk of out-of-control fires, risk to property and too much damage to vegetation.

The prescribed burn program for Hospital Hill will be designed around the site vegetation, seasonal fuel load and timed for optimum climatic conditions. The timing of prescribed burns will be based on recommendations as given at the time of annual hazard assessments. The frequency of prescribed burns will be assigned as per the recommendations set out in “Fire Management Guidelines” by Reef Catchments 2009, and from annual fuel load assessments.

4.1.2 Protection of property

Fire lines or fire breaks are dozed and maintained tracks which can be used to access the bush land reserve to fight fires, but also used to stop the spread of fires or reduce fire impacts on property. The placement of fire lines are located between property which needs to be protected and the likely direction of the advancing fire. Fire lines are constructed well in advance of bushfire seasons and their maintenance is vital to protecting property. The fire lines range in width but are commonly 3-6m wide.

4.1.3 Building construction standards

The design of a house can minimise the risk of fire starting from air borne embers. Ramsay and Rudolf (2003) describe house design options that can reduce the risk of embers catching on the house and starting a fire. Some potential ignition points include vertical surfaces, timber surfaces and places where combustible materials accumulate such as gutters. Gullies and hills can be used to offer some protection to houses and should be considered prior to the allocation of a building site. The construction of earth embankments and retaining walls can be useful in reducing the radiation from fires and therefore damage to property (Ramsay and Rudolf, 2003). The Australian standard AS 3959 (Construction of buildings in bushfire – prone areas), can be used to assist with designing a house to minimise the risk of fire starting in and around the house. Future residential buildings adjacent to Hospital Hill should be constructed in accordance with the Australian standards.

4.1.4 Communication and community preparedness

The community have an important role in minimising fuel loads in the reserve and need to prepare themselves for bushfire season. Residents can reduce fuel loads by not dumping green waste in the reserve. Prior to the back burning operations the Council should inform the likely affected residents at least two week prior to the fires.

4.2 Management areas and fire lines

The Hospital hill area will be divided up into three management areas. The existing roads through the reserve will be used as fire breaks or fire lines and also used to define bushfire management areas. Fire lines will be constructed adjacent to residential areas. The proposed management areas and location of fire lines are shown in Figure 3. It is anticipated that one management area will be burnt each year in rotation. This cell burning system will reduce overall bushfire hazard, minimise erosion, maintain biodiversity values and reduce the amount of unsightly burnt areas.

However, it should be noted that rainfall patterns will influence the amount of fuel that is accumulated in the reserve. Fuel inspections should be conducted leading into the dry season to determine fuel loads and bushfire risk. The fuel load and bushfire risks will be used to assess the need and timing of back burning operations. The timing of the burns will also depend on weather conditions such as rain, wind and heat. While the Plan states that each management area will be burnt every three years, this frequency will be monitored and may change over time.

Figure 3. Showing the three bushfire management areas.

4.3 Management and maintenance actions

4.3.1 Schedule of actions

Table 2. Schedule of bushfire management actions.

Year	Task	Who is Responsible	Resources	Timing	Estimated Costs
1 – 2010-11	Develop fire lines	WRC	Employ a contractor to doze agreed fire lines	September 2010	$2800
	Monitoring areas	WRC	Development of photo monitoring points. Prior to fire season	June 2010	In-kind
	Reserve signage	WRC	Preventing unauthorized vehicle access	October 2010	$600
	Fuel load inspections	DERM and WRC		August – September 2010	-
	Community awareness	WRC	Letter drop to residents to inform of pending back burning operations and press release articles.	August – September 2010	In-kind
	Coordinate back burning operations in Management area 1	DERM	DERM fire team with water trucks	August – September 2010	In-kind
2 – 2011-12	Maintain fire lines	WRC	Slasher	June 2011 and November 2011	$1500
	Monitoring areas	WRC	Photo monitoring points prior to fire season	June 2010	In-kind
	Fuel load inspections	DERM and WRC		August – September 2011	-
	Community awareness	WRC	Letter drop to residents to inform of pending back burning operations and press release articles.	August – September 2010	In-kind
	Coordinate back burning operations in Manage	DERM	DERM fire team with water	August – September 2010	In-kind
3 – 2012-13	Maintain fire lines	WRC	Slasher	June 2011 and November 2011	$1500
	Monitoring areas	WRC	Photo monitoring points prior to fire season	June 2010	In-kind
	Fuel load inspections	DERM and WRC		August – September 2012	-
	Community awareness	WRC	Letter to residents to inform of pending back burning operations and press release articles	August – September 2010	In-kind
	Coordinate back burning operations in Management area 3	DERM	DERM fire team with water trucks	August – September 2012	In-kind
4 – 2013-14	Maintain lines	WRC	Slasher	June 2011 and November 2011	$1500
	Monitoring areas	WRC	Photo monitoring points prior to fire season	June 2010	In-kind
	Fuel load inspections	DERM and WRC		August – September 2012	-
	Community awareness	WRC	Letter to residents to inform of pending back burning operations and press release articles	August – September 2010	In-kind
	Coordinate back burning operations in Management area 3	DERM	DERM fire team with water trucks	August – September 2012	In-kind

4.3.2 Prescribed Burn Plan

The rationale for the back burning regime frequency is based on Regional Ecosystem recommendations and the recommendations set out in "Fire Management Guidelines" (Reef Catchments 2009). The fire intensity should be low, and timed for late wet/dry season when there is good soil moisture. Management of this fire tolerant vegetation type should be based on maintaining vegetation composition, structural diversity, animal habitats and preventing extensive wildfire.

4.3.3 Fire Fighting and Evacuation Plan

Table 3. Fire fighting and evacuation plan

Strategy	Description	Community Priority	Emergency Response
Availability of water on site	Water will need to be trucked in as there are no hydrants onsite. A hydrant map is located in Appendix 1	1. OFS Phone: 000 2. Malcolm Wubble DERM Phone: 0428675580 3. WRC 49450237 4. Fire Warden	QFS Phone: 000
Evacuation Plan	Exit via Yardley Crescent and Leichardt Street	1. OFS Phone: 000 2. Malcolm Wubble DERM Phone: 0428675580 3. WRC 49450237 4. Fire Warden	QFS Phone: 000
Safe Exit Route	Via existing road reserve Yardley Crescent	1. OFS Phone: 000 2. Malcolm Wubble DERM Phone: 0428675580 3. WRC 49450237 4. Fire Warden	QFS Phone: 000
Fire Line Placement	Fire lines have been established behind all residences	1. OFS Phone: 000 2. Malcolm Wubble DERM Phone: 0428675580 3. WRC 49450237 4. Fire Warden	QFS Phone: 000

4.3.4 Contacts / Stakeholders

Table 4. Contacts / Stakeholders

Contact Name	Title	Organisation	Responsibility	Phone	Mobile
Malcolm Wubble	Operations Fire Management	DERM	Controlled burns	49670815	0428675580
Catchment Services (Leigh Benson)	Environment Officer	WRC	• Establishment and maintenance of fire lines and access tracks • Signage • Monitoring	49450237	0427738321
Bowen Emergency Services		ESQ	Fire fighting and emergency response	132500	0419756013
		Telstra	Communications tower and underground fibre optics	132203	
Calvin Derness	Engineering Manager	Southern Cross Communications	Communications Tower	47262080	0408777630
Ray Lawrence		Emergency Services QLD			0418766862
Rob Luscott		QFS			47861811

5. References

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6. Appendix 1. Hydrant map for Hospital hill

Water hydrants denoted by red markers