

Bathurst Regional Council

Management Plan Brooke Moore Woodland Reserve West Bathurst



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ACKNOWLEDGMENT

This Management Plan (MP) was prepared in 2021 by Bathurst Regional Council in consultation with key stakeholders. The plan was placed on public exhibition in August 2021 and was adopted by Council on 20 October 2021.

It is recommended that the MP be reviewed and updated every five years.

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Front Cover Image - Woodland wildflowers on display at Brooke Moore Reserve

TABLE OF CONTENTS

1	INTRODUCTION1
1.1	Reserve Description1
1.2	Reserve Location2
1.3	Land Classification and Zoning in LEP 20142
1.4	Land Development3
2	CONSERVATION SIGNIFICANCE
2.1	Local Significance5
2.2	Regional Significance6
3	MANAGEMENT ISSUES
3.1	Past Threats7
3.2	Present Threats7
4	CURRENT CONDITION OF RESERVE
5	MANAGEMENT AREAS11
5.1	Management Area 112
5.2	Management Area 213
5.3	Management Area 314
5.4	Brooke Moore Oval15
6	MANAGEMENT FRAMEWORKS 16
6.1	Current Management16
6.2	BRC Council Managed Crown Land Draft Plan of Management 16
6.3	Bathurst Region Vegetation Management Plan17
6.4	Bathurst Biodiversity Management Plan17
6.5	Brooke Moore Reserve Ecological Burn Plan18
6.6	Identification of Stakeholders18
6.7	Responsibilities18
6.8	Management Actions18
7	RISK MANAGEMENT
8	REFERENCES

ABBREVIATIONS

Abbreviation	Description
B Act (NSW)	Biosecurity Act 2015
BC Act	Biodiversity Conservation Act 2016
BBMP	Bathurst Biodiversity Management Plan
BGGW	Box-Gum Grassy Woodland
BRC	Bathurst Regional Council
BRVMP	Bathurst Region Vegetation Management Plan 2019
CEEC	Critically Endangered Ecological Community
CEEPO	Community Environmental Engagement Program Officer (Eco Logical Australia, 2018)
CLM Act	Crown Land Management Act 2016
CMCL POM	Council-managed Crown Lands Plan of Management
DPIE	NSW Department of Planning, Industry and Environment
EEC	Endangered Ecological Community
EPBC Act (Cth)	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth).
GB	Greening Bathurst
LEP	Bathurst Regional Local Environmental Plan 2014
LG Act	Local Government Act 1993
LGA	Local Government Area
LG Reg	Local Government (General) Regulation 2021
LLS	Local Land Services
MP	Management Plan
NSW	New South Wales
PCT	Plant Community Type
REF	Review of Environmental Factors
RFS	NSW Rural Fire Service
UMCC	Upper Macquarie County Council

1 INTRODUCTION

Bathurst Regional Council's Bathurst Region Vegetation Management Plan (BRVMP) identifies that the development of specific management plans for key remnant vegetation areas of high conservation value is essential in the management of existing areas of remnant vegetation to improve their environmental, recreational, and visual qualities and attributes through protection and enhancement.

It is this strategy that underpins the development of this Management Plan (MP) for Brooke Moore Woodland Reserve, West Bathurst.

The Brooke Moore Woodland Reserve Management Plan also aligns with Council's Council-managed Crown Land Draft Plan of Management (CMCL POM), whose management framework sets out objectives specific to Council-managed Crown Land that is identified as 'Park' and 'Natural Area – Bushland' under the *Local Government (General) Regulation 2021*. The CMCL POM states that the use of parks is promoted and facilitated for the general enjoyment of residents and visitors, and that management of community lands is consistent with Councils environmental planning strategies including the BRVMP and Council adopted environmental planning directions implemented for the Reserves.

It is important to note that this MP relates to environmental condition and biodiversity protection and enhancement of the woodland reserve and does not deal in detail with infrastructure associated with the Brooke Moore Oval, Bathurst Indoor Sports Stadium, roads, pathways, and subsurface infrastructure such as sewer, water, or drainage networks. For information pertaining to general park maintenance and asset management within this woodland reserve, refer to Council's draft Council Managed Crown Land Draft Plan of Management.

1.1 Reserve Description

Located adjacent to Alexander and Suttor Streets West Bathurst, Brooke Moore Woodland Reserve is a 5.8-hectare area of Crown Land managed by Bathurst Regional Council. The area includes the northern section of 'Brooke Moore Oval' referred to as Brooke Moore Reserve, Alexander Street Reserve, and a small section of Hector Park north of the Bathurst Indoor Sports Stadium referred to as Hector Park Box-Gum Grassy Woodland.

The area is of high conservation value as identified in the *Bathurst Biodiversity Management Plan* (BBMP) (Mactaggart & Goldney, 2012), containing one of only a few remaining examples of the Critically Endangered Ecological Community (CEEC) White Box, Yellow Box, Blakely's Red Gum Grassy Woodland (Box-Gum Grassy Woodland) in the Bathurst urban area.

The Brooke Moore Reserve site features a widely spaced, mature upper canopy of three species, *Eucalyptus blakelyi* (Blakely's Red Gum), *E.melliodora* (Yellow Box) and *E. bridgesiana* (Apple Box). The shrub layer is sparse to absent which is characteristic of Box-Gum Grassy Woodland. The groundcover is dominated by native tussock grasses primarily *Themeda triandra* (Kangaroo Grass) and *Austrodanthonia sp.* (Wallaby Grass), and a moderate diversity of native forbs and rushes that is characteristic of Box-Gum Grassy Woodland. Extensive environmental rehabilitation works undertaken at the site in recent years including revegetation, the installation of nest boxes, weed control, and the installation of fencing to control unrestricted vehicle access has contributed significantly to improving the ecological health rating of the site, that being of a good-high condition as per the BBMP (Mactaggart & Goldney, 2012), with some areas of good grassy understorey displaying a wide diversity of forb species.

The condition of the ecological community in Alexander Street Reserve and Hector Park Box-Gum Grassy Woodland are identified as being in moderate condition with a highly modified understorey due to regular mowing, passive recreational use, and unrestricted vehicle access. However, both sites

feature a widely spaced, mature upper canopy of *Eucalyptus* trees that are characteristic of Box-Gum Grassy Woodlands.

The Brooke Moore Woodland Reserve is identified as an important part of the Mount Panorama Woodland Precinct that also includes Boundary Road Reserve, Blayney Road Common, Vietnam Veterans Park, Bathurst Archery Range and Albens Reserve.

1.2 Reserve Location

Brooke Moore Woodland Reserve is in the suburb of West Bathurst within the Bathurst Regional Council Local Government Area (LGA). The area is bounded by Suttor Street to the north, and Brooke Moore Oval and the Bathurst Indoor Sports Stadium in the south, with Alexander and Rocket Streets dividing the three areas (refer to Figure 1).



Figure 1: Location of Brooke Moore Reserve, Alexander Street Reserve and Hector Park Box-Gum Grassy Woodland, West Bathurst (© NSW Land and Property Information 2021).

1.3 Land Classification and Zoning in LEP 2014

Brooke Moore Woodland Reserve consists of three separate parcels of land which are zoned as follows under the Bathurst Regional Local Environment Plan (LEP) 2014. The parcels of land are Crown Reserves, with Bathurst Regional Council the Crown Reserve Manager:

Site Name	Lot & Plan	LEP Zoning	Land Classification	Crown Reserve No.	Area
Brooke Moore Reserve	Lot 7013 DP1114435	E2 - Environmental Conservation	Crown	79362	3.81 ha
Alexander Street Reserve	Lot 7014 DP1114435	RE1 – Public Recreation	Crown	79362	0.69 ha
Hector Park BGGW	Lot 7015 DP1114395	RE1 – Public Recreation	Crown	79362	1.33 ha

 Table 1: Property description and zoning.

The objectives of E2 Environmental Conservation zone are:

- To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.
- To prevent development that could destroy, damage or otherwise have an adverse effect on those values.

The objectives of RE1 Public Recreation zone are:

- To enable land to be used for public open space or recreational purposes.
- To provide a range of recreation settings and activities and compatible land uses.
- To protect and enhance the natural environment for recreational purposes.
- To protect and conserve the historical and scenic quality of Bathurst's open space areas.
- To provide a network of open space that encourages walking and cycling.

1.4 Land Development

Gazetted on the 24 January 1986, Brooke Moore Reserve (Oval) was named in honour of local physician Dr John Brooke Moore (1860-1937) and his son Dr Brooke Moore (1900-1968). Both men were highly respected for their active participation in the public life of the Bathurst community most notably on sporting committees such as cricket and golf, as well as their services to the NSW Ambulance Service and the then NSW Fire Brigade.



Figure 2: Deposited Plan 758065 from 24 April 1962 indicating that prior to the construction of Alexander Street and designation of Brooke Moore Reserve, Alexander Street Reserve and Hector Park, the three reserves were one parcel of land. (NSW Land Registry Services, 2021)

Prior to the gazettal of the reserve in 1986, Lot 7013 DP1114435, Lot 7014 DP1114435 and Lot 7015 DP1114395 were one allotment identified as Reserve R.79362 for Public Recreation Notified 1st March 1957 (Figure 2). During the 1960's, the development of a residential subdivision west of Larson Street (Cummings, Cutler, Hill and McGrath Streets) and the subsequent construction of Alexander Road and Rocket Street extension resulted in the subdivision of the three parcels of land to eventually form what we now know as Brooke Moore Reserve (Oval), Alexander Street Reserve and Hector Park.

At the time of the development of the residential subdivision, a drainage detention basin was constructed within the southwestern corner of Brooke Moore Reserve (Oval) with the primary purpose of redirecting stormwater away from properties within the vicinity of Suttor, Cutler and Rocket Streets.

A baseball oval comprising of a baseball diamond and outfield, dugouts, batting cage and amenities block was constructed on the drainage detention basin at Brooke Moore Reserve (Oval) between 1979 and

1981 for use by local and regional baseball until 2005. The oval has since been upgraded by local cricket clubs as a cricket ground for use during the summer cricket season.

In 2003, a 2000m² parcel of land (Lot 1 DP1091859) in the north eastern corner of Brooke Moore Reserve was acquired by the NSW State Government for the construction of the new Fire and Rescue NSW, Bathurst Station. Located at the corner of Suttor and Alexander Streets, the fire station was constructed in 2006 and opened on the 14 March 2007 by the NSW Minister for Emergency Services Hon Tony Kelly MLC.





Figure 3 & 4: (L-R) Aerial view of Brooke Moore Alexander Reserve, Street Reserve and Hector Park in 1943 when the three reserves were one parcel of land, and in 1975 after the construction Alexander Street and the Rocket Street extension (© NSW Land and Property Information 2021).

Note: Current road network as of 2021, is displayed and coloured grey on both images for reference.

2 CONSERVATION SIGNIFICANCE

Brooke Moore Woodland Reserve is recognised as an important passive recreation space for the Bathurst community and has high conservation value, of both local and regional significance.

2.1 Local Significance

Brooke Moore Woodland Reserve is of local conservation significance as it:

- Form's part of a native vegetation corridor, providing strong linkages to the nearby Blayney Road Common via the Bathurst Golf Course, and is an integral part of the remnant native vegetation that comprises the wider Mount Panorama Woodland Precinct and beyond (Figure 5). Connectivity between the remnants allows native wildlife to move more easily around the Bathurst area in search of food, shelter, and breeding partners.
- Brooke Moore Woodland Reserve is in close proximity to residential areas with easy access from Alexander Street directly off the Mitchell Highway, one of the main entrances into Bathurst CBD. It forms a natural pedestrian route for walkers travelling to and from the nearby business park at Robin Hill and Bathurst Cemetery, as well as the residential areas north of Suttor and Rocket Streets. It also forms part of several potential circular walking routes linking West Bathurst and Mount Panorama.



Figure 5: Reserves comprising the Mount Panorama Woodland Precinct including Brooke Moore Woodland Reserve (circled) and extent of remnant Box-Gum Grassy Woodland (indicated in yellow) (SEED Map Accessed 12 April 2021).

2.2 Regional Significance

Brooke Moore Woodland Reserve is of regional conservation significance as:

- The vegetation community within the area has been identified as plant community type Box-Gum Grassy Woodland (PCT1330) (Figure 6) which is classified as a Critically Endangered Ecological Community (CEEC) under the *Biodiversity Conservation Act 2016 (NSW)* and the *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)*. Brooke Moore Reserve is of a good/high condition containing a good canopy cover of healthy mature eucalypts with some areas of good grassy understorey displaying a wide diversity of forb species. Alexander Street Reserve and the small section of Hector Park are in moderate condition, however, feature a widely spaced, mature upper canopy of eucalypts representative of Box-Gum Grassy Woodlands.
- The area provides potential habitat for threatened flora and fauna species including several known threatened species observed within and in adjoining areas of the Mount Panorama Woodland Precinct namely Hoary Sunray (*Leucochrysum albicans var. tricolor*), Little Eagle (*Hieraaetus morphinoides*), Gang Gang Cockatoo (*Callocephalon fimbriatum*), Speckled Warbler (*Chthonicola sagittatus*), Regent Honeyeater (*Anthochaera phrygia*), Scarlet Robin (*Petroica boodang*), and Diamond Firetail (*Stagonopleura guttata*).



Figure 6: Extent of remnant Box-Gum Grassy Woodland CEEC (indicated in yellow PCT Id:1330) (SEED Map Accessed 7 June 2021).

3 MANAGEMENT ISSUES

3.1 Past Threats

Prior to the introduction of fencing around Brooke Moore Reserve in 2006, vandalism and the clearing of native vegetation was detracting from the overall condition of the remnant vegetation, affecting connectivity with nearby reserves that comprise the Mount Panorama Woodland Precinct. Removal of standing and/or fallen timber for firewood has also impacted on habitat values for hollow dependent species including native birds and arboreal marsupials as well as woody debris dependent species such as reptiles and insects.

The illegal disposal of domestic, construction and building waste, as well as unauthorised vehicle access across the area has caused soil compaction, degradation of vegetation, weed invasion, and significant soil erosion.

Urbanisation and the construction of critical infrastructure including roads, stormwater mitigation, and power have reduced the extent and quality of Box-Gum Grassy Woodland within the area and affected connectivity with nearby remnant vegetation.

3.2 Present Threats

3.2.1 Invasive Weeds

The proliferation of invasive weed species is identified as the primary impact within the woodland reserve, with priority weed species including, St John's Wort (Hypericum perforatum), Scotch Thistle (Onopordum acanthium), and Blue Periwinkle (Vinca *major*) and weeds of national significance including Serrated Tussock (Nassella trichotoma), Blackberry (Rubus fruticosus), African Lovegrass (Eragrostis curvula) and Bridle Creeper (Asparagus asparagoides) (Figure 6) having the greatest potential to out-compete most of the native grasses, forbs, and herbs that comprise Box-Gum Grassy Woodland. The reduction in flora species diversity at the ground to lower mid stratum (>2m) is expected to have caused a significant reduction in native fauna diversity, including the number of perching bird species and small ground dwelling marsupials utilising this area.

Although not identified as priority weeds under the *Biosecurity Act 2015 (NSW)*, exotic weed species such as Monterey Pine (*Pinus radiata*), Paspalum Grass (*Paspalum dilatatum*) and Couch Grass (*Elymus repens*) continue to present a threat to the condition and quality of Box-Gum Grassy Woodland in the area.



Figure 6: Invasive weeds such as Bridal Creeper (*Asparagus asparagoides*) continue to present a threat to the condition and quality of Box-Gum Grassy Woodland in the area.

3.2.2 Rubbish Dumping

Dumping of garden waste and litter within the woodland reserve can introduce weeds and attract unwanted pests and vermin, increase nutrient pollution entering nearby Jordan Creek in addition to the immediate negative impact on visual amenity of the site. Construction and building waste such as waste concrete, timber and bricks may also have properties that make them hazardous or potentially harmful to human health and the environment. Whilst the extent of this issue has been reduced since Brooke Moore Reserve was fenced to exclude vehicle access, the dumping of garden waste, littering and the disposal of construction and building waste continue to be an issue in Alexander Street Reserve and within Hector Park's Box-Gum Grassy Woodland.

3.2.3 Pest Vertebrate Species

Predation of small native marsupials, reptiles, and bird species by cats (*Felis catus*) is evident in the area subsequently leading to degradation of fauna species diversity and impacting on the occurrence of small ground dwelling marsupials, and native bird and reptile species in the area.

Cats can also be carriers of diseases such as feline panleukopaenia, sarcosporidiosis and toxoplasmosis. The diseases toxoplasmosis and sarcosporidiosis, can be transmitted by cats to humans, domestic stock, and some native animals. Cats may also spread a variety of exotic diseases including rabies that could seriously threaten wildlife, and human health in the event of an outbreak.

3.2.4 Firewood Collection and Removal of Vegetation

The installation of fencing has successfully reduced the occurrence of firewood collection, vandalism and the removal of native vegetation at Brooke Moore Reserve. However, this continues to present significant issues for the areas comprising Alexander Street Reserve and Hector Park's Box-Gum Grassy Woodland.

Although firewood collection is perceived as 'good land management' by removal of fuel and reducing fire risk, dead standing trees or 'stags' and fallen timber provide food and habitat for hollow dependent fauna and are essential for maintaining ecological processes in Box-Gum Grassy Woodland CEEC's.

The recruitment of *Eucalyptus* species either through assisted natural regeneration or active revegetation works undertaken by BRC and the community have been impacted by vandalism and the illegal removal of juvenile and mature trees. This has wider implications for the establishment of faunadependent nesting hollows in an area where hollows are in short supply with hollow formation in most Eucalypt species not presenting until around 130-150 years in age.

3.2.5 Unauthorised Vehicle Access and Vandalism

The installation of wildlife-friendly rural fencing and locked service gates at Brooke Moore Reserve in 2006 has significantly reduced the impacts of unauthorised vehicles such as motorbikes and 4WDs on the reserve. However, there is the potential threat of vandalism such as plant removal, and ongoing damage to fencing, paths and gates.

Unauthorised vehicle access is evident in Alexander Street Reserve (Figure 7) and the Hector Park Box-Gum Grassy Woodland causing soil compaction, degradation of vegetation, weed invasion, and soil erosion.



Figure 7: Damage from unauthorised vehicle access in Alexander Street Reserve.

3.2.6 Unauthorised Plantings and Environmental Rehabilitation Works

Unauthorised plantings and environmental rehabilitation works in recent years by adjacent property holders and members of the public are evident across the reserve with the planting of Sheoak (*Casuarina cunninghamiana*) in Alexander Street Reserve, and the removal of weeds and subsequent planting of native tree's, grasses, and rushes in Brooke Moore Reserve. Although these works may contribute to improving the general ecological health of the area, they could potentially impact on the high conservation value of the Box-Gum Grassy Woodland CEEC within the reserve. In addition, any

environmental rehabilitation works conducted within a Box-Gum Grassy Woodland CEEC including pruning and/or removal of vegetation require a thorough environmental assessment to be conducted prior to rehabilitation works commencing.

4 CURRENT CONDITION OF RESERVE

The current condition of the areas that comprise the Brooke Moore Woodland Reserve are outlined in **Table 2** and based upon site assessments completed as part of Bathurst Regional Council's Biodiversity Management Plan (Mactaggart & Goldney, 2012).

The ecosystem condition and biodiversity conservation value of Brooke Moore Reserve (WB8) was rated as good and high respectively as it is an area exhibiting a significant patch of Box-Gum Grassy Woodland then identified as an endangered ecological community (EEC). Within the fenced conservation area there is a dominance of native species in groundcover, however areas such as the oval and road reserves not excluded are slashed.

The ecosystem condition and biodiversity conservation value of Alexander Street Reserve (WB9), an open space opposite Brooke Moore Reserve on Alexander Street was rated moderate as it is an area exhibiting Box-Gum Grassy Woodland (EEC). The condition of the vegetation community has been reduced due to slashing of native grass groundcover the presence of weeds and resultant surface erosion. The area is regularly mowed and maintained by Council for passive recreational use. The Hector Park Box-Gum Grassy Woodland (WB11), on the corner of Alexander and Rocket Streets including the area located to the north of the Bathurst Indoor Sports Stadium, was rated moderate for biodiversity condition and high for biodiversity conservation value as it is an area featuring isolated remnant vegetation and scattered *Eucalyptus* trees identified as species associated with Box-Gum Grassy Woodland. The condition of the vegetation community has been reduced due to slashing of native groundcover grasses and a high proportion of introduced grasses and forbs. Like Alexander Street Reserve, the area is regularly mowed and maintained by Council for passive recreational use.

Table 2: Current Condition of Management	Areas as rated in	n Bathurst Regional	Councils Biodiversity
Management Plan (Mactaggart & Goldney,	, 2012)		

Area	Description	Approx. Area	Biodiversity Condition	Biodiversity Conservation value
WB8	Brooke Moore Reserve	3.81 ha	Good	High
WB9	Alexander Street Reserve	0.69 ha	Moderate	Moderate
WB11	Hector Park BGGW	1.33 ha	Moderate	High

5 MANAGEMENT AREAS

The woodland reserve has been mapped into four management areas based upon the vegetation type and condition, land use, access and previous environmental rehabilitation works undertaken.

These management areas are described as:

- Management Area 1 Remnant woodland vegetation (Brooke Moore Reserve) (Green)
- Management Area 2 Remnant woodland, open space, and passive recreation (Alexander Street Reserve) (Blue)
- Management Area 3 Remnant woodland, open space, and passive recreation (Hector Park Box-Gum Grassy Woodland) (Yellow)
- Brooke Moore Oval public recreation space and stormwater drainage detention basin (Red)

Refer to Figure 8 below for locations of each of these management areas.



Figure 8: Brooke Moore Woodland Reserve Management Areas (© NSW Land and Property Information 2021).

5.1 Management Area 1

Management Area 1 is identified as Brooke Moore Reserve, an area approximately 2 hectares in size, comprising of remnant native vegetation (Figure 9). The reserve is managed as an environmental conservation zone as per the Bathurst Region Local Environmental Plan (2014).

Extensive environmental rehabilitation works have been undertaken at the site in recent years including revegetation, adoption of 'No Mow Zone' practices, the installation of nest boxes, weed control, and the installation of fencing and minor earth works to control unrestricted vehicle access.



Figure 9: Brooke Moore Woodland Reserve Management Area 1 – Brooke Moore Reserve (Oval).

The use of ecological burns as an

environmental management tool have also been undertaken within the reserve. A low intensity, cool burn was carried out in 2018 to increase biodiversity through encouraging the regrowth of native herbs, forbs and grasses, whilst reducing fine fuel loads within the reserve and the risk of an uncontrolled bushfire occurring during the fire season.

The area is bordered in the north by Suttor Street, east by Alexander Street and to the south by Brooke Moore Oval (Figure 10).



Figure 10: Brooke Moore Woodland Reserve Management Area 1 - Brooke Moore Reserve (Oval).

5.2 Management Area 2

Management Area 2 is identified as Alexander Street Reserve, an area of approximately 0.69 hectares in size. It is bounded by Suttor Street in the north, the rear of Cutler Street residences to the east, Rocket Street to the South and Alexander Street to the west (Figure 12).

The area features a highly modified understorey due to regular mowing, passive recreational use, and unrestricted vehicle access, however, contains a widely spaced, mature upper canopy of *Eucalyptus* trees including Yellow Box (*Eucalyptus meliodora*), and Blakely's Red Gum (*Eucalyptus blakelyi*) that are characteristic of Box-Gum Grassy Woodlands (Figure 11).



Figure 11: Management Area 2 - Alexander Street Reserve from Suttor Street looking south.

The area is subject to significant sheet and rill erosion within the vicinity of the unauthorised vehicle access off Alexander Street and off Rocket Street at the rear of Cutler Street residences. During storm or heavy rainfall events, unauthorised earthworks including the excavation of swales and table drains have seen runoff redirected to the lowest point in the reserve impacting on several properties in Cutler Street.



Figure 12: Brooke Moore Woodland Reserve Management Area 2 – Alexander Street Reserve.

5.3 Management Area 3

Management Area 3 is the Hector Park Box-Gum Grassy Woodland, an area of 1.33 hectares opposite Brooke Moore Reserve on the corner of Alexander and Rocket Streets (Figure 15).

The quality of the vegetation community has been reduced due to slashing of native grass groundcover the presence of weed species most notably mature Monterey Pines (*Pinus radiata*), and minor earthworks and resultant surface erosion (Figures 13 & 14).

The area is subject to significant sheet and rill erosion due to unauthorised vehicle access off Alexander and Rocket Streets, and via the rear of the Bathurst Indoor Sports Stadium.

The area is regularly mowed and maintained by Council for passive recreational use.



Figure 13 & 14: Management Area 3 – Small section of Hector Park from Alexander Street looking east, and from Rocket Street looking south.



Figure 15: Brooke Moore Woodland Reserve Management Area 3 – Small section of Hector Park.

5.4 Brooke Moore Oval

This southern section of Brooke Moore Reserve (Oval) will be managed under Council's draft Council Managed Crown Land Draft Plan of Management and therefore not addressed here.

6 MANAGEMENT FRAMEWORKS

6.1 Current Management

The current level of environmental management across the four management areas is low, with mowing undertaken in the open space areas of Alexander Street Reserve and within the Hector Park Box-Gum Grassy Woodland.

As an environmental conservation area, Brooke Moore Reserve is managed as a 'No Mow Zone' with annual invasive weed control works undertaken, maintenance of gates and fences as required, and ecological burns carried out on a 5-10-year cyclic basis.

6.2 BRC Council Managed Crown Land Draft Plan of Management

The BRC Council Managed Crown Land Draft Plan of Management (CMCL POM) (Locale Consulting, 2020) is an important statutory document that provides information for the effective long-term management of public land within the Bathurst LGA. It also establishes directions for planning, resource management and maintenance of that land. A series of generic Plans of Management exist and have been developed by Bathurst Regional Council (and its predecessors) to comply with the requirements of the *Local Government Act 1993* to assist in their management of Council owned "Community" land.

The draft Plan of Management identifies Brooke Moore Reserve as 'Natural Area – Bushland' whilst Alexander Street Reserve and Hector Park are both identified as a 'Park'.

The primary value and function of reserves categorised as 'Park under the CMCL POM is to provide open space for the community to participate in passive recreation endeavours for people of all ages. Parks also provide strong visual amenity which can be enjoyed and adds value to its surrounds. Another key value of these areas is to enable recreation pursuits and the use of spaces that are accessible and generally available to the community at all times.

The primary value and function of land categorised as 'Natural Area – Bushland' is their contribution to the cultural and rural identity of the Bathurst area with natural landscapes providing many environmental and ecological benefits. These areas are significant for their strong aesthetic appeal for residents and visitors as well as being key natural landscapes which support vegetation and habitat for the region's biodiversity. Bushland areas provide some recreation opportunities while also contributing to water and air quality.

Relevant information from this document for Brooke Moore Woodland Reserve falls predominantly under Part 3: Park, with Brooke Moore Reserve addressed under Part 5: Natural Area - Bushland.

Part 3: Park identifies two key management objectives specific to this Management Plan including:

- Management Objective 1: Use of Parks is promoted and facilitated for the general enjoyment of residents and visitors.
- Management Objective 3: Community groups are able to operate in select areas where sustainable and involved management and maintenance.

Part 5: Natural Area – Bushland identifies two key management objectives specific to this Management Plan including:

- Management Objective 1: Manage "Community" Land consistent with Council's environmental planning strategies including the Vegetation Management Plan and site-specific directions.
- Management Objective 2: Retain bushland in a size and arrangement that will enable the existing flora and fauna communities to survive long-term.

6.3 Bathurst Region Vegetation Management Plan

The Bathurst Region Vegetation Management Plan (BRVMP) (Molino Stewart, 2019) was prepared to provide a working tool to manage vegetation resources and to plan for the future. Relevant information from this document for Brooke Moore Woodland Reserve falls predominantly under Native Remnant Vegetation (Section 7), with Brooke Moore Reserve and Hector Park identified as key areas of remnant vegetation. Alexander Street Reserve is not identified specifically within the BRVMP however strategies set out in Section 7 Native Remnant Vegetation and Section 10 Parks and Public Reserves still apply.

Objective 1 is to manage the existing areas of remnant native vegetation to improve their environmental, recreational, and visual qualities and attributes through protection and enhancement including:

- RV1 Maintain or enhance the diversity, structure, and ecological integrity of remnants through the adoption and implementation of best management practices and recommendations.
- RV2 Enhance the extent, viability and diversity of native grasses and groundcover plants where they occur.
- RV3 Future development not to significantly threaten or negatively impact on remnant vegetation.
- RV5 Continually monitor the condition of the remnant vegetation, ensuring its on-going sustainability through targeted management actions.
- *RV7* Develop specific management plans for key reserves with remnant vegetation.

Objective 8 is to increase the extent of fragmented remnants by linking and creating vegetation corridors to provide for their ecological sustainability and function as wildlife corridors and recreational areas.

• RV17 Link remnant vegetation area through the urban landscape.

Objective 11 is to educate and increase awareness within the community on the function and value of remnant native vegetation and the threats to its sustainability.

• *RV22* Educational programs and material developed and disseminated to targeted community groups.

Objective 12 is to manage bushfire risk on Council controlled properties while ensuring ecological values are protected and enhanced.

• RV23 Implement appropriate fire strategies in areas of remnant vegetation.

6.4 Bathurst Biodiversity Management Plan

The aim of the Bathurst Biodiversity Management Plan (BBMP)(Mactaggart & Goldney, 2012) is to identify strategies and prioritised actions by which Bathurst Regional Council can better monitor, protect and manage biodiversity assets within the Bathurst region.

The Plan makes several recommendations in relation to Brooke Moore Reserve (WB8), Alexander Street Reserve (WB9) and a small section of Hector Park (WB11) including:

- Action AM24 Develop a planting program within the urban/peri-urban environment that enhances biodiversity to include road reserves, buffer zones in industrial areas and housing estates, parks, open space reserves, drainage reserves, and operational land.
- Action AM25 Identify areas where a change in groundcover management can be undertaken to improve biodiversity and ecosystem function.

• Action AM26 Undertake training days for Council on-ground staff and machinery operators to ensure the protection of biodiversity.

6.5 Brooke Moore Reserve Ecological Burn Plan

In 2018 Eco Logical Australia (ELA) was engaged by Bathurst Regional Council to develop the Brooke Moore Reserve Ecological Burn Plan (Eco Logical Australia, 2018). Prescribed ecological burns have been identified as a valuable management tool that can maintain and enhance biodiversity and assist in reducing the intensity and adverse impact of bushfires in extreme weather conditions.

An initial ecological assessment was undertaken by ELA outlining the ecological values and constraints present within the reserve. This in turn set the basis for the development of the Brooke Moore Reserve Ecological Burn Plan whereby advice and guidance are provided on fire prescriptions, techniques, safeguards, and requirements of the NSW Rural Fire Service (RFS) and relevant NSW environmental legislation and regulations.

6.6 Identification of Stakeholders

Brooke Moore Woodland Reserve does not have a community group directly involved in the management and use of the area. From 2005 to 2007, community volunteers contributed to the environmental rehabilitation of the reserve through revegetation works as part of the NSW Governments Environmental Trust funded 'Saving Brooke Moore Woodland' Project.

Stakeholders of the project area include recreational users of the reserves, including neighbours and residents of adjacent urban areas, NSW Crown Lands, Greening Bathurst, Central Tablelands Landcare, Wiradjuri Traditional Owners Central West Aboriginal Corporation, Bathurst Wiradyuri & Community Elders Group, Bathurst Local Aboriginal Land Council, Boundary Road Reserve Landcare Group, Upper Macquarie County Council (UMCC), Central West Councils Environment & Waterways Alliance, Central Tablelands Local Land Services (LLS) and NSW Department of Planning, Industry & Environment (DPIE).

6.7 Responsibilities

Bathurst Regional Council as Crown Land Manager has responsibility for the management of Brooke Moore Woodland Reserve. It is recommended that management of the site be carried out in accordance with the management actions contained within this MP, in addition to general park maintenance activities as detailed within Council's draft CMCL POM.

6.8 Management Actions

The management actions within **Table 3**, **4** and **5** have been developed in response to the management issues identified within this MP.

Table 3: Management Area 1 – Brooke Moore Reserve Management Actions

Management Issue	Actions	Occurrence	Responsibility	Status
1. Biosecurity	1A: Utilise Best Practice Management Guidelines where they exist to plan and monitor invasive weed control.	During weed control operations.	BRC	Choose an item.
	1B: Conduct seasonal weed survey, and map priority weed species for density and distribution.	Annually during September; as resources permit.	BRC	Choose an item.
	1C: Undertake, at a minimum, an annual invasive weed control program	Annual during Spring-Summer; as resources permit	BRC	Choose an item.
	1D: Use integrated weed management techniques to control weeds including appropriate combinations of herbicide application, physical removal, mulching, revegetation, and ecological burns.	During weed control operations.	BRC / Contractor	Choose an item.
	1E: Where equipment (including mowing) is brought onto the site ensure that it is clean of weed seeds.	As required	BRC / Contractor	Choose an item.
	1F: Where invasive weeds are known to exist on neighbouring properties, notify residents of their obligations under the <i>Biosecurity Act</i> 2015 (<i>NSW</i>) to control weeds.	As required	BRC / UMCC	Choose an item.
	1G: Undertake monitoring of cats using camera traps to determine baseline population data and participate in research into new management options.	Annually	BRC / LLS	Choose an item.
2. Revegetation	2A: Develop a revegetation plan for the management area in accordance with planting densities and species for Box Gum Woodland	Once	BRC	Choose an item.
	2B: If practical, source local provenance native Eucalypt long-stem tube-stock.	Once. Then as required for plant replacements.	BRC / Nurseries	Choose an item.

Management Issue	Actions	Occurrence	Responsibility	Status
	2C: Native grass seed to be harvested from Brooke Moore Reserve, or if practical local provenanced native seed, tube-stock or virotubes.	Once. Then as required for plant replacements.	BRC / Contractor / Nurseries	Choose an item.
	2D: Site preparation for revegetation utilising native tube-stock including planting locations to be surveyed and locations marked for <i>Eucalyptus</i> species and groundcover species.	Once	BRC / Contractor	Choose an item.
	2E: Site preparation for revegetation utilising native grass seed including minor earthworks to prepare and lightly scarify unauthorised tracks for revegetation.	Once	BRC / Contractor	Choose an item.
	2F: Maintenance will be contracted out for 18 months following planting i.e., weed control and tree guard replacement. Replacement or infill planting may also be required	Monthly for 18 months then as resources are available.	BRC / Contractor	Choose an item.
	2G: Ensure 'No Mow Zones' are implemented or maintained in areas of high conservation value.	Ongoing	BRC	Choose an item.
	2H: Protect naturally regenerating native species from mowing and trampling via tree guards, fencing etc.	Ongoing	BRC / Contractor	Choose an item.
3. Nesting Boxes	3A: Prepare a nesting box strategy that includes design, installation, monitoring, maintenance, and replacement guidelines.	Once. Upon completion of baseline assessment of existing nesting boxes (as per Table 3 - 7C)	BRC / GB / Consultant	Choose an item.
4. Ecological Burns	4A: Update the Brooke Moore Reserve Ecological Burn Plan to incorporate two burn units.	Once	BRC / Consultant	Choose an item.
	4B: A Review of Environmental Factors (REF) and Operational Burn Plan developed and completed prior to the undertaking of the ecological burn.	At least one month prior.	BRC / NSW RFS	Choose an item.

Management Issue	Actions	Occurrence	Responsibility	Status
	4C: Notify residents of neighbouring residential areas, schools in the neighbouring area and the general community prior to any ecological burns.	Two weeks prior to ecological burn.	BRC / NSW RFS	Choose an item.
	4D: Site preparation for the ecological burn including slashing and clearing of fuels from around large old trees to avoid root/trunk damage and compaction, and to create control lines.	Two weeks prior to ecological burn. In accordance with the Brooke Moore Reserve Ecological Burn Plan, REF and NSW RFS Operational Burn Plan.	BRC / Contractor	Choose an item.
	4E: Ecological burn to be conducted in accordance with the Brooke Moore Reserve Ecological Burn Plan, REF and NSW RFS Operational Burn Plan.	Autumn (April / May)	BRC / NSW RFS	Choose an item.
	4F: Undertake photo point monitoring and flora field surveys prior to and following the ecological burn to determine if there is an increase in native flora diversity and a decrease in the occurrence of invasive weed species.	Six months prior to ecological burn. Annually in Spring post ecological burn.	BRC	Choose an item.
5. Vandalism & Rubbish	5A: Check and maintain park infrastructure including fences, gates, and signs. Utilise monitoring technology, if necessary, to combat illegal and anti-social activities.	In accordance with Council's draft CMCL POM inspection frequency.	BRC	Choose an item.
	5B: Investigate illegal dumping incidents and prosecute offenders if possible. Remove piles of rubbish and correctly dispose.	As required	BRC	Choose an item.
	5C: Repair damage to signage, fencing, gates, or other future assets.	As required	BRC	Choose an item.
	5D: Replacement or repair of vegetation with local provenance tube-stock.	As required	BRC / Contractor	Choose an item.
6.Community Engagement	6A: Develop a Communication Strategy and Community Engagement Strategy.	Once	BRC	Choose an item.

Management Issue	Actions	Occurrence	Responsibility	Status
	6B: Hold pre-works site meeting for residents to provide information about upcoming works.	As required	BRC	Choose an item.
	6C: Host community and school's planting / maintenance / field-days including provision of information regarding Box-Gum Grassy Woodland CEEC.	In accordance with Councils Community & Schools Environmental Conservation Volunteer Program schedule.	BRC / NSW DPIE / LLS	Choose an item.
	6D: Produce media releases and write articles for Council's online/print media distribution network to inform ratepayers and the Bathurst Community about the project and overall state of the areas.	As required	BRC	Choose an item.
	6E: Work with local veterinary practices and Council Rangers to increase awareness of cat impacts and promote responsible pet ownership through letterbox drops to surrounding residents, field days, social media, e-newsletters, and Council website.	As required	BRC / LLS	Choose an item.
	6F: Update one sign in the project area informing of environmental rehabilitation works and how they can contribute. Signs to include a QR code to link to online information and facilitate further community input.	Once	BRC	Choose an item.
7. Monitoring	7A: Conduct baseline assessment to establish the current condition of the overall site utilising already established photo point monitoring sites.	Prior to on ground works.	BRC	Choose an item.
	7B: Complete photo point monitoring and flora and fauna field surveys (step point monitoring) to determine if native flora and fauna species are increasing.	Bi-annually	BRC	Choose an item.
	7C: Conduct baseline assessment of existing nesting boxes to establish current condition.	Once	BRC / GB	Choose an item.

Management Issue	Actions	Occurrence	Responsibility	Status
	7D: Undertake monitoring of nesting boxes as per nesting box strategy.	Ongoing	BRC / GB	Choose an item.
	7E: Undertake monitoring of natural tree hollows as per nesting box strategy to identify when habitat supplementation of the nesting box program is no longer required.	Ongoing	BRC / GB	Choose an item.
	7F: Monitor cat activity and report activity and management actions via Feral Scan.	Ongoing	BRC / LLS	Choose an item.
	7G: Utilise monitoring data to assess success of completed management actions and to guide future management actions.	Bi-annually	BRC	Choose an item.
	7H: Record volunteer numbers at various events, number of media releases, radio advertising and enquiries or complaints to BRC regarding the project.	As required	BRC	Choose an item.

Table 4: Management Area 2 – Alexander Street Reserve Management Actions

Management Issue	Actions	Occurrence	Responsibility	Status
1.Biosecurity	1A: Utilise Best Practice Management Guidelines where they exist to plan and monitor invasive weed control.	During weed control operations.	BRC	Choose an item.
	1B: Conduct seasonal weed survey, and map priority weed species for density and distribution.	Annually during September; as resources permit.	BRC	Choose an item.
	1C: Undertake, at a minimum, an annual invasive weed control program	Annual during Spring-Summer; as resources permit.	BRC	Choose an item.
	1D: Use integrated weed management techniques to control weeds including appropriate combinations of herbicide application, physical removal, mulching, revegetation, and ecological burns.	During weed control operations.	BRC / Contractor	Choose an item.
	1E: Where equipment (including mowing) is brought onto the site ensure that it is clean of weed seeds.	As required	BRC / Contractor	Choose an item.
	1F: Where invasive weeds are known to exist on neighbouring properties, notify residents of their obligations under the <i>Biosecurity Act</i> 2015 (<i>NSW</i>) to control weeds.	As required	BRC / UMCC	Choose an item.
	1G: Undertake monitoring of cats using camera traps to determine baseline population data and participate in research into new management options.	Annually	BRC / LLS	Choose an item.
2.Revegetation (unauthorised tracks only)	2A: Develop a revegetation plan.	Once	BRC	Choose an item.
	2B: Native grass seed to be harvested from Brooke Moore Reserve, or if practical local provenanced native seed.	Once. Then as required for plant replacements.	BRC / Contractor / Nurseries	Choose an item.
	2C: Site preparation for revegetation utilising native grass seed including minor earthworks to prepare and	Once	BRC / Contractor	Choose an item.

Management Issue	Actions	Occurrence	Responsibility	Status
	lightly scarify unauthorised tracks for revegetation.			
	2D: Maintenance will be contracted out for 18 months following planting i.e., weed control and reseeding.	Monthly for 18 months then as resources are available.	BRC / Contractor	Choose an item.
3.Unauthorised Vehicle Access	3A: In consultation with neighbouring property holders, install and monitor vehicle control devices along the perimeter of Alexander Street Reserve.	Once	BRC / Crown Lands	Choose an item.
	3B: In consultation with neighbouring property holders, rationalise and formalise an access road at the rear of Cutler Street properties.	Once. Maintenance as required: as resources permit.	BRC / Crown Lands	Choose an item.
	3C: Install surveillance device to detect, record and subsequently reduce illegal activities and unauthorised vehicle access.	As required: as resources permit.	BRC	Choose an item.
4. Tree Pruning & Removal	4A: Council officers will conduct an assessment and prepare an arborist report to determine condition and health of trees where it is perceived that they present a risk to the public and adjacent properties.	As required	BRC	Choose an item.
	4B: Council is the only authority to prune and/or remove trees.	Always	BRC	Choose an item.
	4C: Only those trees listed in the arborist report are to be modified and/or removed.	Always	BRC	Choose an item.
	4D: All tree pruning, and removal/s are to follow Councils Tree Management Procedures and Biodiversity Guidelines for Tree Management.	Always	BRC	Choose an item.
	4E: Disturbance of soil and surrounding vegetation during modification and removal should be minimised.	Always	BRC	Choose an item.

Management Issue	Actions	Occurrence	Responsibility	Status
	4F: All vehicles, plant and equipment are to remain on formed access roads and tracks where possible.	Always	BRC	Choose an item.
	4G: Work must be conducted during daylight hours and finish before dusk.	Always	BRC	Choose an item.
	4H: Appropriate environmental hygiene protocols must be implemented to avoid exotic seed, and or pathogens from contaminating the sites.	Always	BRC	Choose an item.
	4I: Tree removals are to be replaced at a ratio of 1:1 with BGGW tree species only within the MP site.	As required	BRC	Choose an item.
5. Mowing	5A: Slasher/flail mower blades are to be set high (no less than 10cm/4in.) as per mowing protocols (Dorrough, 1995) (Prober, et al., 2002) to reduce scalping to native grasses, forbs, and herbs.	As required	BRC	Choose an item.
	5C: Brush cutting/line trimming is kept well clear of the base of the tree and/or shrub to reduce collar damage.	As required	BRC	Choose an item.
	5D: Install 'No Firewood Collection' ordinance signage.	Once	BRC	Choose an item.
6.Vandalism & Rubbish	6A: Check and maintain park infrastructure including fences, gates and signs. Utilise monitoring technology as per Action 3C if necessary, to combat illegal and anti- social activities.	In accordance with Council's draft CMCL POM inspection frequency.	BRC	Choose an item.
	6B: Investigate illegal dumping incidents and prosecute offenders if possible. Remove piles of rubbish and correctly dispose.	As required	BRC	Choose an item.
	6C: Repair damage to signage, fencing, gates, or other future assets within the park.	As required	BRC	Choose an item.

Management Issue	Actions	Occurrence	Responsibility	Status
	6D: Replacement or repair of vegetation with local provenance tube-stock.	As required	BRC / Contractor	Choose an item.
7. Monitoring	7A: Conduct baseline assessment to establish the current condition of the overall site and establish photo point monitoring sites.	Prior to on ground works and then bi-annually.	BRC	Choose an item.
	7B: Complete photo point monitoring and flora and fauna field surveys (step point monitoring) to determine if native flora and fauna species are increasing.	Bi-annually	BRC	Choose an item.
	7C: Monitor cat activity and report activity and management actions via Feral Scan.	Ongoing	BRC / LLS	Choose an item.
	7D: Utilise monitoring data to assess success of completed management actions and to guide future management actions.	Bi-annually	BRC	Choose an item.
	7E: Record volunteer numbers at various events, number of media releases, radio advertising and enquiries or complaints to BRC regarding the project.	As required	BRC	Choose an item.

Management Issue	Actions	Occurrence	Responsibility	Status
1.Biosecurity	1A: Utilise Best Practice Management Guidelines where they exist to plan and monitor invasive weed control.	During weed control operations.	BRC	Choose an item.
	1B: Conduct seasonal weed survey, and map priority weed species for density and distribution.	Annually during September; as resources permit.	BRC	Choose an item.
	1C: Undertake, at a minimum, an annual invasive weed control program	Annual during Summer; as resources permit.	BRC	Choose an item.
	1D: Use integrated weed management techniques to control weeds including appropriate combinations of herbicide application, physical removal, mulching, revegetation, and ecological burns.	During weed control operations.	BRC / Contractor	Choose an item.
	1E: Where equipment (including mowing) is brought onto the site ensure that it is clean of weed seeds.	As required	BRC / Contractor	Choose an item.
	1F: Where invasive weeds are known to exist on neighbouring properties, notify residents of their obligations under the <i>Biosecurity Act 2015 (NSW)</i> to control weeds.	As required	BRC / UMCC	Choose an item.
	1G: Undertake monitoring of cats using camera traps to determine baseline population data and participate in research into new management options.	Annually	BRC/LLS	Choose an item.
2.Revegetation	2A: Develop a revegetation plan for each management area.	Once	BRC	Choose an item.
	2B: If practical, source local provenance native Eucalypt long-stem tube-stock.	Once. Then as required for plant replacements.	BRC / Nurseries	Choose an item.

Management Issue	Actions	Occurrence	Responsibility	Status
	2C: Native grass seed to be harvested from Brooke Moore Reserve, or if practical local provenanced native seed, tube- stock or virotubes.	Once. Then as required for plant replacements.	BRC / Contractor / Nurseries	Choose an item.
	2D: Site preparation for revegetation utilising native tube- stock including planting locations to be surveyed and locations marked for <i>Eucalyptus</i> species and groundcover species.	Once	BRC / Contractor	Choose an item.
	2E: Site preparation for revegetation utilising native grass seed including minor earthworks to prepare and lightly scarify unauthorised tracks for revegetation.	Once	BRC / Contractor	Choose an item.
	2F: Maintenance will be contracted out for 18 months following planting i.e., weed control and tree guard replacement. Replacement or infill planting may also be required	Monthly for 18 months then as resources are available.	BRC / Contractor	Choose an item.
	2G: Protect naturally regenerating native species from mowing and trampling via tree guards, fencing etc.	Ongoing	BRC / Contractor	Choose an item.
3.Unauthorised Vehicle Access	3A: Install and monitor vehicle control devices along the perimeter including along the northern boundary of Hector Park to 332 Rocket Street.	Once	BRC / Crown Lands	Choose an item.
	3B: Install surveillance device to detect, record and subsequently reduce illegal activities and vehicle access	As required: as resources permit.	BRC	Choose an item.
4.Vandalism & Rubbish	AA: Check and maintain park infrastructure including fences, gates and signs. Utilise monitoring technology as per Action 3B if necessary, to combat illegal and anti-social activities.		BRC	Choose an item.

Management Issue	Actions	Occurrence	Responsibility	Status
	4B: Investigate illegal dumping incidents and prosecute offenders if possible. Remove piles of rubbish and correctly dispose.	As required	BRC	Choose an item.
	4C: Repair damage to signage, fencing, gates, or other future assets within the park.	As required	BRC	Choose an item.
	4D: Replacement or repair of vegetation with local provenance tube-stock.	As required	BRC	Choose an item.
5. Mowing	5A: Slasher/flail mower blades are to be set high (no less than 10cm/4in.) as per mowing protocols (Dorrough, 1995) (Prober, et al., 2002) to reduce scalping to native grasses, forbs, and herbs.	As required	BRC	Choose an item.
	5B: Brush cutting/line trimming is kept well clear of the base of the tree and/or shrub to reduce collar damage.	As required	BRC	Choose an item.
	5C: Install 'No Firewood Collection' ordinance signage.	Once	BRC	Choose an item.
	5D: Ensure 'No Mow Zones' are implemented or maintained in areas of high conservation value.	Ongoing	BRC	Choose an item.
6. Monitoring	6A: Conduct baseline assessment to establish the current condition of the overall site and establish photo point monitoring sites.	Prior to on ground works and then bi-annually.	BRC	Choose an item.
	6B: Complete photo point monitoring and flora and fauna field surveys (step point monitoring) to determine if native flora and fauna species are increasing.	Bi-annually	BRC	Choose an item.
	6C: Monitor cat activity and report activity and management actions via Feral Scan.	Ongoing	BRC/LLS	Choose an item.

Management Issue	Actions	Occurrence	Responsibility	Status
	6D: Utilise monitoring data to assess success of completed management actions and to guide future management actions.	Bi-annually	BRC	Choose an item.
	6E: Record volunteer numbers at various events, number of media releases, radio advertising and enquiries or complaints to BRC regarding the project.	As required	BRC	Choose an item.

7 RISK MANAGEMENT

The methodology used for conducting a risk assessment as part of this MP was in accordance with BRC's risk management policies and procedures. This includes:

- i. Risk identification
- ii. Risk rating using the risk matrix prior to the implementation of risk controls or elimination measures.
- iii. Risk controls or elimination measures.
- iv. Risk rating using the risk matrix after the implementation of risk controls or elimination measures.

Table 7 outlines the key identified risks and risk ratings that have been identified in relation to this PM using the consequence and probability ratings and risk matrix presented in **Table 6**. With these risk controls or elimination measures in place all identified risks have been ranked as having a low-risk rating. This is accompanied by a Trigger Action Response Plan (TARP) comprising of various contingency measures to be implemented if defined triggers arise.

	Consequences			Likelinood Rating								
	A B C D E						E	4				
Consequence Rating	(a) Generation / Financial	(b) Assets	(c) Environment	(d) Reputation	(e) People	Common or occurs frequently	It is known to occur or "It has happened"	Could occur or has been known to happen	Not Likely to occur	Practically Impossible		
1	Multiple sites services disrupted more than 7 days	Multiple site capability damage (>\$50m)	Massive impact	National /internation al impact	Multiple fatalities	Extreme	Extreme	Extreme	High	Medium	Overall Risi	k Score Intolerable stop work and
2	Site/ Service disrupted more than 7 days	Site level damage (\$5m-\$50m)	Major effect	State wide impact	Lost time injury more than 7 days or fatality	Extreme	Extreme	High	High	Medium	Extreme	immediately introduce further control measures Review and
3	Site/ Service disrupted	Equipment level replacement/ repair (\$100k-\$5m)	Localised effect	Local area impact	Lost time injury less than 7 days	Extreme	High	Medium	Medium	Low	High	introduce additional controls using the hierarchy of hazard controls
4	Partial service or output reduction	Component level replacement repair (\$10k- \$100k)	Minor effect	Limited impact	Medical treatment injury	High	Medium	Medium	Low	Low	Medium	Monitor and maintain strict control measures in line with the hierarchy of hazard controls
5	Slight impact on revenue/ finances	Slight Damage (<10k)	Slight effect	Slight Impact	First aid injury	High	Medium	Low	Low	Low	Low	Tolerable monitor and Review in line with Council policy

Table 6: Risk Matrix and Overall Risk Score

Area of Risk	Risk	Risk Rating	Risk Controls	Risk Rating	Triggers	Contingency Measures
Revegetation	Plants do not survive initial planting.	2C	 Plants to be planted as per best practice for planting native seed, long-stem tube-stock, tube-stock or virotubes. Supplementary watering during drought and periods of high temperatures. Ensure contractor plantings are carried out by an experienced environmental contractor. Ensure community and school volunteer plantings are coordinated and overseen by Councils Community Environmental Engagement Project Officer (CEEPO). Ensure on-going weed removal is adhered to over the life of this MP and beyond. 	5C	 20% loss of native plantings through scheduled monitoring. Weed species comprise no more than: 20% groundcover in years 0-5 15% groundcover in years 5-10 10% groundcover in years 10-15. 	 Increase monitoring frequency. Implement appropriate actions to decrease loss. Replace loss of plantings with locally grown Box-Gum Grassy Woodland species. Extend first year's intensive revegetation works program. Review MP.
Revegetation	Survival rate of 80% not being achieved.	2C	 Plants to be planted as per best practice for planting native seed, long stem tube-stock, tube-stock or virotubes. Supplementary watering during drought and periods of high temperatures. Ensure on-going weed removal is adhered to over the life of this MP and beyond. 	5C	 20% loss of native plantings through scheduled monitoring. Weed species comprise no more than: 20% groundcover in years 0-5 15% groundcover in years 5-10 10% groundcover in years 10-15. 	 Increase monitoring frequency. Implement appropriate actions to decrease loss. Replace loss of contingency plantings with locally grown Box-Gum Grassy Woodland species. Extend first year's intensive revegetation works program. Review MP.
Ecological Burn	Ecological burn decreases biodiversity.	2C	 Ecological burn to follow the Brooke Moore Reserve Ecological Burn Plan. A Review of Environmental Factors (REF) developed and completed prior to the undertaking of the ecological burn. Flora survey conducted pre and post ecological burn. 	5D	Decrease in biodiversity.	Cease ecological burns until a review is undertaken of the Brooke Moore Reserve Ecological Burn Plan.

Ecological Burn	Ecological burn breaks containment lines damaging neighbouring properties.	2C	 A Review of Environmental Factors (REF) and Operational Burn Plan developed and completed prior to the undertaking of the ecological burn. Site preparation for the ecological burn including slashing and clearing of fuels from around large old trees to avoid root/trunk damage and compaction, and to create control lines. Notify residents of neighbouring residential areas, schools in the neighbouring area and the general community prior to any ecological burns. 	5D	Burn breaks containment lines.	 Refer to NSW RFS Operation Burn Plan. Increase site preparation to reduce risk of containment lines being broken.
Biosecurity	Predation of native fauna by feral cats.	2C	 Undertake regular inspections in the first five years, and ongoing inspections as required for the following years. In the event that feral cat density is medium to high (increased signs of dead native fauna), confinement traps are to be utilised following strict guidelines for their use. Increase awareness of cat impacts and promote responsible pet ownership by disseminating information via field days, social media, e-newsletters and Council website. 	5D	Increased signs of dead native fauna.	 Increase monitoring frequency. Implement appropriate actions to decrease faunal loss. Implement additional vertebrate pest control measures including habitat manipulation and/or fencing in consultation with LLS. Review MP.
Illegal Waste Dumping	Domestic and construction waste is dumped in area.	2C	 Check and maintain park infrastructure including fences, gates, and signs. Ensure that all service gates are secured (e.g., locks). Investigate illegal dumping incidents and prosecute offenders if possible. Remove piles of rubbish and correctly dispose. Signage will be installed along boundary fencing and on service gates prohibiting disposal of domestic and construction waste in the area. Create greater awareness amongst neighbouring residents and the West Bathurst community on the biodiversity values of Box-Gum Grassy Woodlands through building appreciation and stewardship of the ecological community and the Brooke Moore Woodland Reserve. 	5C	Increased occurrence of illegal waste dumping incidents.	 Utilise monitoring technology to combat illegal activities. Increase community education on the correct way to dispose of domestic and construction waste. Review MP.

Tree Removal	Disturbance to soil and surrounding vegetation during pruning and removal of trees.	2C	• • •	Follow tree clearing protocols to avoid unnecessary disturbance. All vehicles, plant and equipment are to remain on formed access roads and tracks where possible. Disturbance during removal of the trees is kept to a minimum. Identify the location of threatened flora prior to works and ensure no machinery or equipment is stored or parked temporarily in this location. Undertake staged pruning and removal from highest risk to lowest risk. Implement erosion control measures as per 'Blue Book' - Managing Urban Stormwater: Soils and Construction (NSW Landcom, 2004) where soil disturbance is unavoidable.	5D	Widespread loss or damage to surrounding vegetation Widespread disturbance to soil and ground.	•	Implement appropriate actions to minimise disturbance to soil and surrounding vegetation. Review Tree Management Procedure and Biodiversity Guidelines for Tree Management. Review MP.
Tree Removal	Disturbance, injury, or death to fauna species during pruning and removal of trees.	2C	• • • •	All vehicles, plant and equipment are to remain on formed access roads and tracks where possible. Disturbance during removal of the trees is kept to a minimum. Follow Biodiversity Guidelines for Tree Management to avoid unnecessary disturbance. On the day of felling, all habitat trees will be subject to a visual inspection. Fell non-habitat trees first then a day or so later fell hollow bearing trees after nudging. All attempts will be made to reduce the impact of felling on non-threatened species. Orphaned young will be taken to wildlife carers. Captured injured animals will be taken to the nearest veterinary clinic or wildlife carer for assessment and treatment. Animals will be released in suitable source habitat near to their original location. Following felling, all habitat trees will be inspected for remaining or injured fauna species and to ensure that no hollows are blocked against the ground. Trees may be rolled to ensure that any fauna remaining in hollows are able to escape. If possible, all habitat trees will be inspected for hollows, cracks and crevices suitable for salvage and installation in Brooke Moore Reserve (MA1). Work during daylight hours and finish before dusk.	5C	Fauna disturbed, injured or dead because of tree removal.	•	Implement appropriate actions to minimise disturbance, injury or death of fauna. Review Tree Management Procedure and Biodiversity Guidelines for Tree Management. Review MP.

Biosecurity	Introduction of Pathogens via vehicles and equipment leading to loss of native vegetation.	2C	 All vehicles, plant and equipment to remain on formed access roads wherever possible. Thoroughly clean vehicles and equipment to remove all adhering soil or plant debris before moving locations. Ensure all equipment is free of pathogens such as <i>Phytophthora cinnamonni</i> (Dieback) and Myrtle Rust. 	5D	Phytophthora cinnamonni (Dieback) and Myrtle Rust identified through scheduled monitoring	 Implement appropriate actions to minimise the presence of <i>Phytophthora cinnamonni</i> (Dieback) and Myrtle Rust. Review Tree Management Procedure and Biodiversity Guidelines for Tree Management. Review MP.
Extreme Heat	Extreme heat event leads to a loss of native plantings.	3B	 Carry out monitoring of the site following extreme heat events. Increase supplementary watering during predicted heat events. Ensure matting is in place around native plantings and maintained until establishment to ensure soil moisture retention. Avoid planting during predicted extreme heat events. Plants are locally grown and acclimatised to local climatic conditions. 	5C	Widespread loss or damage to native plantings.	 Increase additional monitoring measures during Summer season. Replace loss of native plantings with locally grown Box-Gum Grassy Woodland species.
Frost	Heavy frost event leads to a loss of native plantings.	3B	 Carry out monitoring of the site following heavy frost events. Avoid planting during predicted heavy frost events. Plants are locally grown and acclimatised to local climatic conditions. 	5C	Widespread loss or damage to native plantings.	 Increase additional monitoring measures during the frost season. Replace loss of native plantings with locally grown Box-Gum Grassy Woodland species. Review MP.

Nesting Boxes	Pest species inhabit nesting boxes	3B	 Carry out monitoring of the nesting boxes as per the nesting box strategy. Conduct removal of pest species following strict protocols set out within the nesting box strategy. 	5C	Pest species identified in nesting box through scheduled monitoring.	 Increase monitoring frequency. Implement appropriate actions to minimise the occurrence of pest species establishing in the nest boxes. Review the Nesting Box Strategy. Review MP.
Biosecurity	Weeds become prolific throughout site impacting on the survival rate of native plantings.	3C	 Ensure on-going weed removal is adhered to over the life of the MP and beyond. Conduct regular photo point monitoring to gauge weed control effectiveness. Ensure matting is in place around all plantings and maintained until establishment of plantings to reduce weeds around plantings. 	5D	Weed species comprise no more than: - 20% groundcover in years 0-5 - 15% groundcover in years 5-10 - 10% groundcover in years 10-15. A new infestation of weeds is detected at the site.	 Increase monitoring frequency. Implement appropriate actions to minimise the occurrence of weeds at the site. Review MP.
Drought	Severe or prolonged drought leads to a loss of native plantings.	3C	 Increase supplementary watering during predicted periods of drought. Utilise alternative water sources during drought i.e., recycled water from WWTP. 	5D	20% loss of native plantings through scheduled monitoring.	 Increase monitoring frequency. Implement appropriate actions to decrease loss. Replace loss of native plantings with locally grown Box-Gum Grassy Woodland species. Review MP.

Vandalism	Plantings are vandalised.	3C	 Boundary fences, bollards and service gates are regularly maintained to restrict access by vehicles. Ensure that all service gates are secured (e.g., locks). Signage will be installed along boundary fencing and on service gates prohibiting vehicle access, trail bikes, and unauthorised access. Create greater awareness amongst neighbouring residents and the West Bathurst community on the biodiversity values of Box-Gum Grassy Woodlands through building appreciation and stewardship of the ecological community and the Brooke Moore Woodland Reserve. 	 Increase monitoring frequency. Implement appropriate actions to decrease loss. Review and strengthen existing fencing measures. Implement Communication Strategy for the site. Replace loss of native plantings with locally grown Box-Gum Grassy Woodland species. Review MP.
Unauthorised Vehicle Access	Unauthorised vehicle access causing soil compaction, degradation of vegetation, and soil erosion.	3C	 Boundary fences, bollards and service gates are regularly maintained to restrict access by vehicles. Minor earthworks including the formation of mounds at the top and bottom of the slope to restrict vehicular access. Ensure that all service gates are secured (e.g., locks). Signage will be installed along boundary fencing and on service gates prohibiting vehicle access, trail bikes, and unauthorised access. Create greater awareness amongst neighbouring residents and the West Bathurst community on the biodiversity values of Box-Gum Grassy Woodlands through building appreciation and stewardship of the ecological community and the Brooke Moore Woodland Reserve. 	 Increase monitoring frequency. Implement appropriate actions to decrease loss. Review and strengthen existing fencing measures. Implement Communication Strategy for the site. Replace loss of native plantings with locally grown Box-Gum Grassy Woodland species. Review MP.

Biosecurity	Herbicide spray drift onto native plantings and non-target species.	3C	 Spraying is carried out on a calm day and all native plantings including existing native non-target plants are protected from spray drift damage. The pressure of application will be kept to a level that prevents herbicide spray drift. Any herbicides applied within or immediately adjacent to riparian vegetation zones must be registered for use in aquatic environments. Biodegradable marker dye is to be added to the chemical to allow treated areas to be easily identified. Ensure the presence/absence of susceptible, non-target species is known prior to commencing work. Ensure the location of target species is understood to reduce the time spent searching and the amount of chemical used pointlessly blanket spraying. 	5D	 Weed species comprise no more than: 20% groundcover in years 0-5 15% groundcover in years 5-10 10% groundcover in years 10-15. Visible signs of herbicide drift on non-target species.	 Increase monitoring frequency. Implement appropriate actions to minimise the occurrence of herbicide spray drift. Replace loss of native plantings with locally grown Box-Gum Grassy Woodland species. Review MP.
Vandalism	Nesting boxes are vandalised.	3C	 Boundary fences, bollards and service gates are regularly maintained to restrict access by vehicles. Ensure that all service gates are secured (e.g., locks). Signage will be installed along boundary fencing and on service gates prohibiting vehicle access, trail bikes, and unauthorised access. Create greater awareness amongst neighbouring residents and the West Bathurst community on the biodiversity values of Box-Gum Grassy Woodlands through building appreciation and stewardship of the ecological community and the Brooke Moore Woodland Reserve. 	5D	Signs of damage or loss of nesting box through scheduled monitoring.	 Increase monitoring frequency. Implement appropriate actions to decrease loss. Review and strengthen existing fencing measures. Implement Communication Strategy for the site. Repair or replace nesting box. Review nesting box strategy. Review MP.

Community Engagement	Failure to engage the community in project activities.	4C	 Ensure that the community planting and maintenance days are adequately promoted. Include free BBQ lunch and/or prizes for volunteers as incentives to participate. Ensure community planting and maintenance days are coordinated and overseen by Councils Community Environmental Engagement Project Officer (CEEPO). 	5D	Low volunteer numbers at community events.	 Increase marketing of events. Utilise paid media to increase reach.
Community Engagement	Failure to engage the school community in project activities.	4C	 Ensure that the objectives of the school environmental conservation volunteer program align with the Australian Curriculum. Ensure schools planting and maintenance days are coordinated and overseen by Councils Community Environmental Engagement Project Officer (CEEPO). 	5D	Schools are unwilling to participate in planting and maintenance events.	 Promote the benefits of the project as part of the Australian Curriculum. Send invitations to relevant teachers directly rather than general school inboxes.
Biosecurity	Weeds not responding to herbicide application.	4C	 Select the least toxic chemical to perform the work and the most suitable chemical for the weed species to be controlled. Use measuring containers for all liquid herbicides and scales for accurately measuring granulated herbicides. Ensure the correct timing and method of control is applied for each priority weed species. Conduct regular photo point monitoring to gauge weed control effectiveness. Ensure weed control personnel adhere to strict biosecurity measures for reducing weed spread e.g. equipment and machinery is clean and free of weed seeds before entering the site. 	5D	Weed species comprise no more than: - 20% groundcover in years 0-5 - 15% groundcover in years 5-10 - 10% groundcover in years 10-15. Target weed species showing little to know sign of herbicide application	 Increase monitoring frequency. Implement appropriate actions to minimise the occurrence of herbicide resistance. Review MP.
Biosecurity	Accidental herbicide spill.	4D	 All chemical containers are to be regularly inspected for leaks to avoid the possibility of environmental or cross contamination. Leaking containers should have their contents transferred to an intact empty container of the same type, or if none is available, a thoroughly 	5E	Soil contamination of site.	 Implement appropriate actions to minimise the occurrence of herbicide spill/s. Implement additional measures to minimise the risk of herbicide spill/s.

 rinsed container which is then clear	labelled and
used as soon as possible. Attapulgite, a shovel and a recove	Irum will be
present on all vehicles to clean up A chemical spill must be reported to	y spills.
involves more than one Litre (L) of	BRC if it
chemical or 10 L of mix.	ncentrate

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