

Mullum Mullum Creek Linear Park
(Currawong Stretch)

Management Plan

March 2011



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MANAGEMENT PLAN

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Executive Summary

The purpose of Mullum Mullum Creek Linear Park (Currawong Stretch) (MMCLP) Management Plan is to provide a guide for the future use, development, landscaping, management and maintenance of the Mullum Mullum Creek Linear Park from the Heidelberg-Warrandyte Road, Warrandyte to Reynolds Road, Doncaster East. This area also incorporates the Currawong Bush Park.

The Management Plan aims to provide a clear vision for the park articulated through objectives, actions, resources and responsibilities and provides a basis for new capital works funding, as well as management actions, to develop and improve this public open space.

The Management Plan contains recommendations for capital works and management. Capital works recommendations include: the upgrade and/or extension of the shared path network; including a bridge across the Mullum Mullum Creek (and associated boardwalks), improved fencing; increased weed control and revegetation works, additional seating and signage, extra park access points and enhanced waterway and general park management practices. The Management Plan also makes a series of recommendations regarding improvements to the meeting room facilities at Currawong Bush Park. It is envisaged that this Management Plan will be reviewed five years after the completion of the capital works program.

Management issues addressed relate to the provision of park facilities, the opportunity to improve awareness of and access to and between various open spaces, fire management, ecological and waterway management and general park maintenance.

Recommendations are made that relate to areas of responsibility for Melbourne Water, which will assist in coordination between management authorities and provide an opportunity to achieve sustainable management of open space for this stretch of the Mullum Mullum Creek. Melbourne Water is the authority responsible for the restoration, maintenance and management of the bed and banks of the Mullum Mullum Creek.

Several consultant studies of the MMCLP (Currawong Stretch) were undertaken during the course of the study including an Ecological Survey, a Wildfire Prevention and Preparedness Plan and engineering assessments. This work formed the basis of the recommendations contained within this report.

An extensive community consultation process was also undertaken, including a community survey of 766 residents and community information sessions. Key stakeholders were also consulted including Parks Victoria and Melbourne Water.

PART ONE

Management Plan Report

1 Introduction

The Mullum Mullum Creek Linear Park (Currawong Stretch) comprises the area of public land along both sides of the Mullum Mullum Creek between Heidelberg-Warrandyte Road, Warrandyte and Reynolds Road, Doncaster East. This stretch was previously described as 'Stage 1' of the Mullum Mullum Creek Linear Park.

The study area includes:

- Currawong Bush Park and the adjoining Glamis Street Reserve in Warrandyte;
- The parkland on the western side of Mullum Mullum Creek, known as the Currawong stretch of the Mullum Mullum Creek Linear Park including Larnoo Reserve;
- The east-west Melbourne Water pipe track reservation that passes through the middle of the Currawong Bush Park.

Council's 2004 Open Space Strategy identifies the Mullum Mullum Creek Linear Park as a linear park of regional significance, as it provides one of the most important informal recreation opportunities within Manningham.

The purpose of the Management Plan is to provide a guide for the future use, development, landscaping, management and maintenance of the Mullum Mullum Creek Linear Park within the Currawong Stretch. The plan contains recommendations for capital works as well as long term aims and objectives for this stretch of the linear park.

The Management Plan is structured into two parts, being:

PART ONE

- Background information;
- Outline of how the Management Plan was developed;
- Vision for Mullum Mullum Creek Linear Park (Currawong Stretch) and a set of goals and objectives on how to implement the vision;
- Recommendations for environmental management, waterway management; recreational opportunities, fire management, cultural heritage, ongoing management, maintenance and monitoring; and
- A capital works program plan to implement recommendations of the Management Plan.

PART TWO

- Outline of the planning and policy context;
- Literature review of relevant local studies and policies;
- Overview of key findings from community consultation; and
- Identification and analysis of existing conditions and discussion of associated issues.

2 Background

In 1992 a Concept Plan, Waterway Management Plan and Stage One Management Plan was completed for the Mullum Mullum Creek Linear Park. Stage One is now described as the Currawong Stretch. The goal of the Stage One Management Plan was to protect and enhance the natural and cultural values of this stretch of the Mullum Mullum Creek as part of a linear park between Croydon and the Yarra, while providing for recreation opportunities.

The plan provided direction for future management, after considering the constraints and opportunities for conservation, recreation and other uses.

In 2004 a Draft Management Plan for the Currawong Bush Park (which comprised Section 1 and 2 of the original Management Plan area) was commenced but never formally adopted by Council.

The Study Area

The study area for the MMCLP (Currawong Stretch) is within the municipal boundaries of Manningham City Council, on the eastern urban fringe of Melbourne. As the crow flies, the site is just over 20 kilometres from the centre of Melbourne, approximately 45 minutes drive from the Melbourne Central Activity District.

The study area includes all private and public land which abuts the Mullum Mullum Creek and Currawong Bush Park between Heidelberg-Warrandyte Road, Warrandyte and Reynolds Road, Doncaster East. The Mullum Mullum Creek forms the boundary between Currawong Bush Park ('Currawong') and the Mullum Mullum Creek Linear Park. This land falls into Doncaster East on the west side of the Creek, and Warrandyte and Donvale on the east. The Currawong stretch of the Mullum Mullum Creek Linear Park lies on the west side of the creek between the roads listed above, a stretch of approximately 1.8 kilometres (Refer Figure 1).

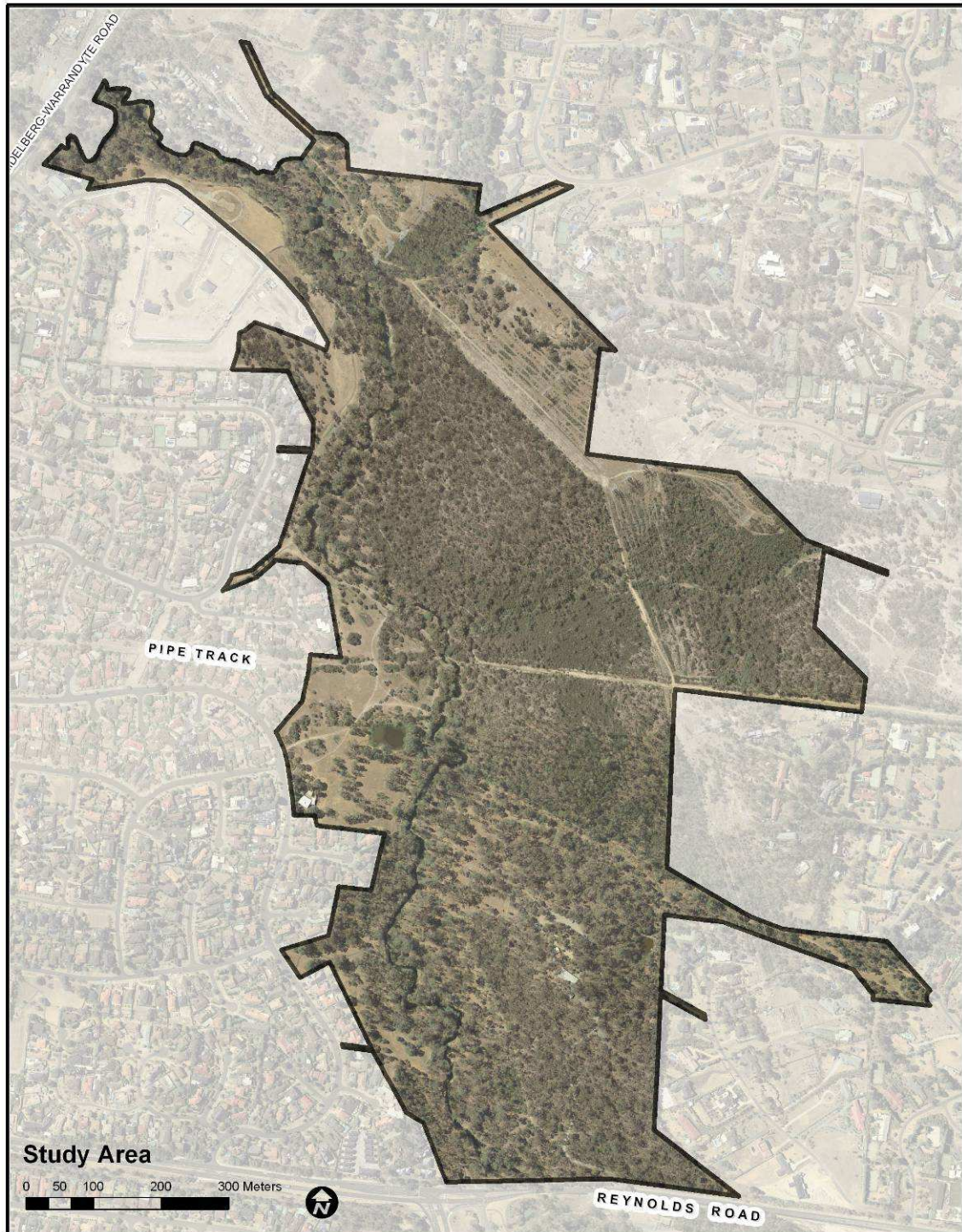


Figure 1. The Study Area - Mullum Mullum Creek Linear Park (Currawong Stretch)

The study area includes 86 hectares of public land managed by Council and Melbourne Water. A Melbourne Water pipe track bisects the study area, running east-west. The Currawong stretch of the MMCLP consists of a relatively narrow corridor on the western side of the creek, with a mixture of remnant vegetation and cleared land and the sealed shared pathway of the Mullum Mullum Creek Linear Park Trail. The MMCLP is a narrow but important recreation and open space corridor following the creek upstream from the Yarra

River through to Ringwood. The stretch owned and managed by Manningham City Council, extends from “Tikalara” adjacent to the Yarra River, Templestowe past Currawong Bush Park through to Glenvale Road, Donvale.

On the eastern side of the creek, the Currawong Bush Park has a much larger area of land, typically characterised by steep terrain. Remnant vegetation dominates the southern portion of the park, with some areas of cleared land towards the northern end. The park is bounded entirely along its western side by the Mullum Mullum Creek. On this side, the Mullum Mullum Creek Linear Park buffers the park from “typical” suburban development zoned “Residential 1”. On the northern and eastern boundaries, the park abuts private properties, of a “semi-urban” nature. Reynolds Road forms the southern boundary of the park.

The Mullum Mullum Creek Linear Park

The Mullum Mullum Creek Linear Park (MMCLP) extends 16 kilometres from where the creek originates near Cherry Tree Grove, Croydon and ends at the confluence of Mullum Mullum Creek and the Yarra River at Tikalara, Templestowe. The Mullum Mullum Creek flows through the Cities of Maroondah, Whitehorse and Manningham.

Manningham’s Public Open Space Strategy defines linear parks as continuous park systems which form an important part of the open space network within the municipality. The MMCLP is classified as a Linear Park of Regional Significance. It is a significant waterway and is the most important Linear Park beside the Yarra River within Manningham, as it contains significant riparian vegetation, forms an important faunal corridor and caters for a variety of recreational activities.

The MMCLP forms strategic links to local trails and other areas of open space, such as picnic areas and play spaces, sporting and community facilities and the residential street network. The MMCLP is extensively used by the local and wider community for walking, dog walking, nature appreciation and cycling. Horse riding is also allowed along some sections of the park.

The planning and development of the MMCLP is a major initiative and high priority for Manningham City Council. It is also Council’s vision to provide a continuous path system for the entire length of the Mullum Mullum Creek. The Mullum Mullum Creek Linear Park Trail is integral to the Metropolitan Trail Network within Manningham which will link the Koonung Trail in Donvale to the Main Yarra Trail in Templestowe. This linkage will result in a shared path network covering over half of the municipality (Refer Figure 2).

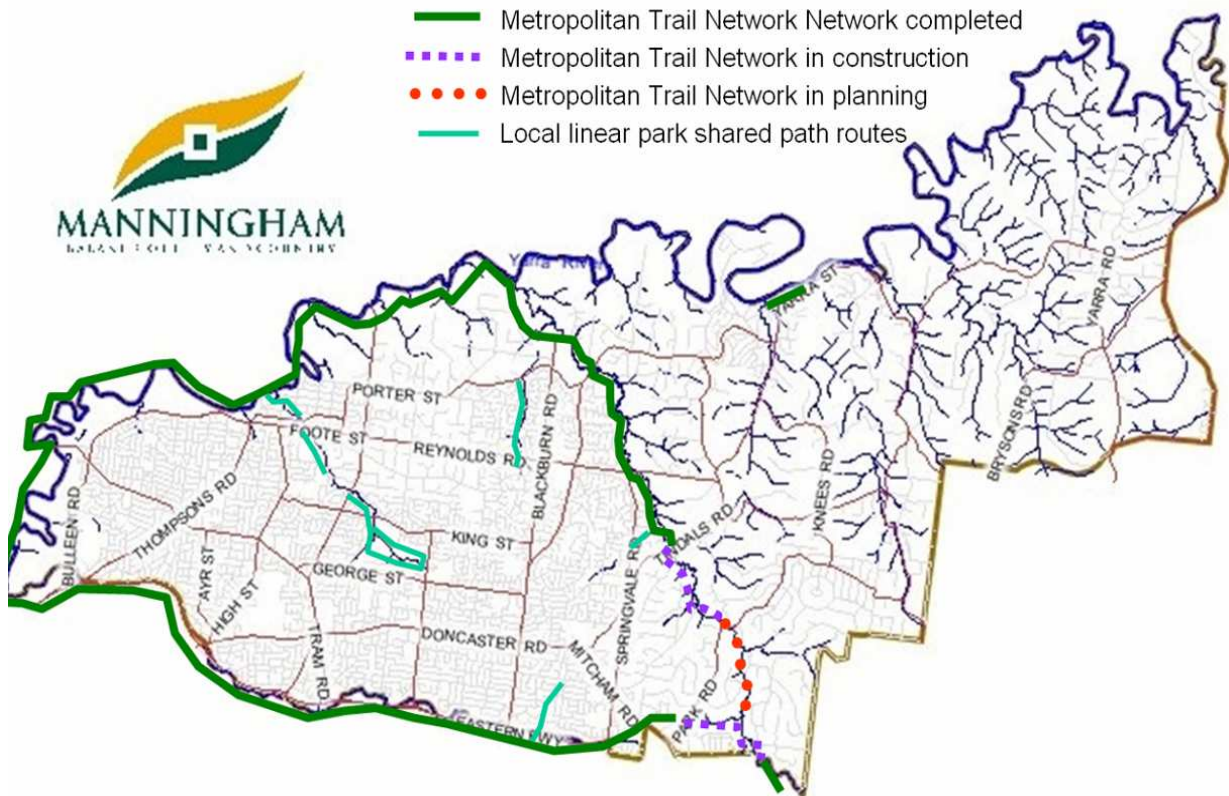


Figure 2. Map of Manningham's Shared Path Network

Methodology

The Management Plan has been prepared on the basis of a detailed analysis of the study area coupled with a consultation process with residents and key stakeholders. Development of the Management Plan included the following stages:

- Development of an Ecological Assessment of the study area and a Wildfire Prevention and Preparedness Plan ;
- Initial community consultation including a community questionnaire and 'officer on site' days, and subsequent analysis of data received;
- Key stakeholder consultation;
- Review of supporting documents and data; including "The Currawong Bush Park Management Plan 2004 (Draft)".
- Site analysis and identification of key issues;
- Development of Draft Management Plan; and
- Public exhibition and community and stakeholder consultation including community information session.

The endorsed Mullum Mullum Creek Linear Park (Currawong Stretch) Management Plan will primarily be used as a resource document for the management of the Currawong Bush Park and the Mullum Mullum Creek Linear Park. It will also form the basis for new capital works funding to improve this open space over the next ten years.

Timing of the implementation of capital works is dependant on available funding from Council and the State Government.

3 Vision, Goals and Objectives

The following vision, goals and objectives have been developed for the Mullum Mullum Creek Linear Park (Currawong Stretch) Management Plan.

Vision

To sustain, protect and enhance the natural environment of the Mullum Mullum Creek Linear Park (Currawong Stretch) as an important feature of Manningham City Council's open space network and to provide opportunities for visitor enjoyment and appreciation of the park, whilst protecting the cultural, heritage and environmental values of the area.

Goals

A set of key goals has been developed to achieve the above vision. Associated objectives are listed for each goal. Collectively these provide the basis for the Management Plan for the future development, management and maintenance of the area.

3.1.1 That community involvement and education is promoted in the planning, use and management of the Mullum Mullum Creek Linear Park (Currawong Stretch).

- a) To provide a range of interpretative signage throughout MMCLP (Currawong Stretch) outlining the environmental significance and bushland management of the area.
- b) To educate and inform the community about the value, and appropriate use of the MMCLP (Currawong Stretch) via suitable signage and promotional material.
- c) To use public education to reduce the incidence of dogs off lead.

3.1.2 That Council works with adjoining landowners in the development and ongoing management of the Mullum Mullum Creek Linear Park (Currawong Stretch).

- a) To assist land owners in environmental and fire hazard management, such as weed control, vegetation maintenance and revegetation.
- b) To support and improve links from adjoining residential areas to the main shared path within the MMCLP (Currawong Stretch).

3.1.3 That cultural heritage sites are protected within the Mullum Mullum Creek Linear Park (Currawong Stretch).

- a) To undertake archaeological surveys, where appropriate, prior to the implementation of any capital works within the area.

- b) To develop and implement an Interpretation Plan for the Currawong Bush Park to interpret the cultural and historical values of the area.

3.1.4 That the conservation and biodiversity values of the Mullum Mullum Creek corridor are improved and protected.

- a) To review and continue to implement a weed and pest monitoring and control program to reduce the impact on indigenous flora and fauna.
- b) To encourage natural regeneration of indigenous vegetation via the bushland management program.
- c) To establish an animal ethics committee to investigate viable control measures to address the kangaroo numbers within Currawong Bush Park.
- d) To help protect wildlife by implementing a range of management initiatives including the erection of additional nesting boxes for bats and birds.
- e) To enhance the wildlife corridor function of the Mullum Mullum Creek as a habitat link between Ringwood and the Yarra River via the removal of obsolete fencing and wildlife enclosures in the Currawong Bush Park.

3.1.5 That an effective and integrated Wildfire and Prevention Plan for the Mullum Mullum Creek Linear Park (Currawong Stretch) is implemented.

- a) To regulate fire use by prohibiting all fires and solid fuel BBQs within the MMCLP (Currawong Stretch) during the declared Fire Danger Period by providing appropriate signage at entry points to the park.
- b) To isolate known ignition sources by implementing appropriate maintenance and management regimes for facilities and vegetation within the linear park.
- c) To discourage arson by requesting that the CFA investigate all unplanned fires.
- d) To facilitate first attack fire fighting by maintaining existing access points into the park and maintaining access to existing water sources.
- e) To ensure that no person should suffer injury or lose their life from wildfire in the reserve by regulating use of the reserves on Total Fire Ban Days and by providing appropriate warning signs at entrances to the Currawong Bush Park.
- f) To facilitate safe evacuation or shelter in place by erecting directional signs at appropriate locations.

- g) To reduce the potential for flame and radiant heat damage to built assets by implementing recommended vegetation management and mowing regimes within the MMCLP (Currawong Stretch).
- h) To reduce potential for ember ignition of built assets by reducing bark fuel hazards and targeting all adjacent private properties for CFA and/or Council community education programs.
- i) To implement fire protection works to minimise environment impact where compatible with safety objectives.
- j) To plan to manage fire spread beyond the reserve by seeking to integrate fire prevention works with neighbouring land managers e.g. Melbourne Water and Parks Victoria.

3.1.6 That waterway management within the Mullum Mullum Creek Linear Park (Currawong Stretch) is co-ordinated with Melbourne Water.

- a) To support works by Melbourne Water to stabilise / rehabilitate the banks along the Mullum Mullum Creek between Heidelberg - Warrandyte Road and Reynolds Road.
- b) To support implementation of the actions in Melbourne Water's Waterway Activity Plan.
- c) To create a wetland comprised of a series of sediment ponds and reed beds for the Arnold Drive (Donvale) outflow pipe in Currawong Bush Park, to improve water quality entering the Mullum Mullum Creek.
- d) To investigate the establishment of a sediment pond for Amersham Drive, Warrandyte, to improve water quality entering Mullum Mullum Creek.
- e) To liaise with Melbourne Water on a regular basis to ensure that there is a co-ordinated approach to the management of environmental, recreational and other values of the Mullum Mullum Creek corridor.

3.1.7 That a range of informal recreation opportunities are provided according to community need and the protection of natural values.

- a) To provide active recreational opportunities for visitors to the MMCLP (Currawong Stretch) including: walking, dog walking, cycling and horse riding.
- b) To develop informal recreation opportunities, where appropriate, which provide for the quiet enjoyment of the area and appreciation of the natural environment.
- c) To undertake regular dog patrols within the MMCLP (Currawong Stretch) to address incidents of dogs in unauthorised areas.

- d) To discourage mountain bike riders from using the Currawong Bush Park by management ensuring regular removal of newly erected jumps and increased park patrols to monitor usage.
- e) To market and promote recreational opportunities within the MMCLP (Currawong Stretch) consistent with the need to manage the area as a wildlife corridor and conservation area.

3.1.8 That where appropriate, all recreation infrastructure within the MMCLP (Currawong Stretch) will be developed to cater for people of all abilities.

- a) To undertake a minor upgrade of the meeting room facilities at Currawong Bush Park to address amenity and disability access issues and to accommodate additional users.
- b) To develop and maintain safe and accessible play spaces within the MMCLP (Currawong Stretch) in accordance with identified need.
- c) To develop a designated disabled car park in the main car park at Currawong Bush Park.

3.1.9 That the trail network within the Mullum Mullum Creek Linear Park (Currawong Stretch) is safe and accessible for the public to use.

- a) To address safety and access issues along the MMCLP (Currawong Stretch) Trail by undertaking a range of trail improvements and/or upgrades for users.
- b) To create a main circuit trail within the MMCLP (Currawong Stretch) by constructing a footbridge across the Mullum Mullum Creek in order to connect the Currawong Bush Park with the main MMCLP Trail (western bank).
- c) To improve the amenity of the MMCLP (Currawong Stretch) Trail by installing additional seating, guide fencing, signage (directional and interpretation) and drinking fountains at nominated locations along its length.
- d) To integrate new open space from the housing estate development at Habitat Drive, Doncaster East, into the MMCLP.

3.1.10 That the implementation of the Management Plan for the Mullum Mullum Creek Linear Park (Currawong Stretch) is regularly monitored.

- a) To monitor and review the implementation of MMCLP (Currawong Stretch) Management Plan annually and implement any resulting changes.
- b) To investigate opportunities for future sources of funding for the ongoing maintenance.

- c) To carry out a review of the MMCLP (Currawong Stretch) Management plan five years after the completion of the capital works recommended in this plan.

4 Recommendations

Implementation Plan

Table 1 provides a summary of recommendations contained in the MMCLP (Currawong Stretch) Management Plan. The agency responsible for implementing each recommendation is identified. For those recommendations which have a capital and ongoing maintenance cost this cost is included.

The proposed major development works are to be undertaken in three stages within provision for ongoing management and maintenance of MMCLP (Currawong Stretch). The stages have been prioritised according to importance and need. It is expected that the implementation of these works will extend beyond Council's existing Five Year Capital Works Program. Therefore, the works could take a considerable time to action unless external funds become available.

Table 1. Summary of Recommendations and Capital Works Implications for Mullum Mullum Creek Linear Park (Currawong Stretch) Management Plan

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	Cultural Heritage					
1	<i>That appropriate interpretation signage is installed around the “scar trees” at Currawong Bush Park.</i>	Council			\$3,000	
2	<i>That an assessment of the dead “scar tree” at Currawong Bush Park be undertaken to establish whether any structural works are required to stabilise it and prolong its existence.</i>	Council	\$1,000			
3	<i>That an archaeological survey be conducted within the study area prior to any capital works that involves soil disturbance. <u>Note: cost to be factored into each project.</u></i>	Council				
	Flora, Fauna and Habitat					
4	<u>Kangaroos and Rabbits</u> <i>That the most efficient methods of reducing kangaroos numbers in the Currawong Bush Park be investigated. This will require the involvement of a veterinarian, an animal ethics committee and community consultation.</i>	Council, DSE, Animal Ethics Committee	\$20,000			
5	<i>Review gateway treatments to the reserves to ensure that fencing does not restrict access by kangaroos. Also investigate fencing some of the more botanically significant parts of the reserve from kangaroos (either permanently or temporarily).</i>	Council	\$30,000			
6	<i>Gateway fencing (not wildlife enclosure)</i>	Council	10,000			

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
7	<i>Reduce rabbit numbers by destroying and/or removing rabbit habitats e.g. log and rubbish piles, rabbit burrows etc.</i>	Council	\$8,650	\$6,250	\$6,250	\$4,250
8	<u>Weed Control</u> <i>Control the rapidly expanding infestations of Boneseed (Chrysanthemoides monilifera) and Gorse (Ulex europaeus) in the Amersham block (Boneseed) and around Glamis Street Reserve (Gorse and Boneseed). The first treatment should be completed prior to the weeds setting seed in late spring 2009.</i>	Council	\$31,720 (Inclusive of Recommendations 7 -12)	\$31,720	\$31,720	\$24,520
9	<i>Maintain a high level of vigilance and weed control (mainly hand weeding) in areas near Reynolds Rd mapped on Figure 3 as being in ecological condition rating 'B', as they are the most intact parts of the study area.</i>	Council				
10	<i>Increase the general level of weed control (mostly hand weeding) in the blue area of Figure 3 immediately south of the dead end of Habitat Park Drive.</i>	Council				
11	<i>Increase the general level of weed control at Glamis Street Reserve relative to the rest of the study area, particularly focusing on pines, blackberry and Spanish Heath.</i>	Council				
12	<i>Commence concerted efforts to control: Rambling Dock (Acetosa sagittata) along Mullum Mullum Ck (being careful of the toxicity of Hemlock, which grows with the Rambling Dock) and Sweet Pittosporum (Pittosporum undulatum) in the Amersham block, working eastward from the uninfested area west of the track beneath the transmission lines.</i>	Council				

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
13	<i>Whenever feasible, control <i>Asparagus asparagoides</i> (Bridal Creeper) when it is encountered during other management tasks. It is scattered across most of the study area and is most dense in Valley Grassy Forest and Grassy Dry Forest from the Amersham block to west to Frank Street. Chipping out the plants' crowns with a small mattock is a quick way to achieve reasonable control. Otherwise, herbicide can be used in accordance with the Best Practice Management Guide for Bridal Creeper available via internet).</i>	Council				
14	<i>Mowing: On the west side of the Mullum Mullum change from regular mowing regime to annual mow and catch in locations where indigenous groundstorey still exists, and particularly where the indigenous herbs, lilies still exist.</i>	Council				
15	<i>On the west side of the Mullum Mullum, continue the strategy of prescribed burning on the slopes (6 sites), but increase the occurrence of these to ensure that the burning occurs at an appropriate frequency (approximately 10-20 year frequency)</i>	Council	\$500	\$500	\$500	\$500
16	<i>On the west side of the Mullum Mullum, trial prescribed burning on the creek flats, being particularly mindful of the fire sensitivity of some of the species and habitat that occur here.</i>	Council	\$500	\$500	\$500	\$500
17	<i>Review all weed control activities and priorities if grazing by rabbits and kangaroos abates substantially, which could greatly alter the relative abundances of weeds.</i>	Council				
18	<u>Fire</u> <i>In the Currawong Bush Park no prescribed burning is</i>	Council				

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	<p><i>recommended while the native vegetation's ground flora is so denuded. Burning would make little difference to fire safety but would place further stress on an ecosystem that is already at its breaking point.</i></p> <p><i>There is a need to investigate the benefits and impact of the removal of dead wood and the most efficient methods to be used in any areas deemed suitable. The ecological benefits of retaining dead wood on site must be carefully considered and managed. Public education on this topic should also be considered.</i></p>					
19	<u>Fire – MMCLP - continue</u>		\$500	\$500	\$500	\$500
20	<u>Fire – MMCLP – on creek flats</u>		\$500	\$500	\$500	\$500
21	<p><u>Helping Wildlife</u></p> <p><i>Optionally erect additional nest boxes for bats and birds, to an extent consistent with Council's capacity to undertake the following task.</i></p>	Council				
22	<i>Monitor occupation of known tree hollows each September and November. Evict pest species such as feral bees and Indian Mynas.</i>	Council	\$3,000	\$3,000	\$3,000	\$3,000
23	<i>Continue to control European Wasp nests and be particularly on the alert for wasps nesting during January to April</i>	Council				
24	<i>It is recommended that all available opportunities be taken to discourage bird feeding by visitors to the study area, with an explanation of the harm that it causes.</i>	Council				
25	<i>Use public education and enforcement to reduce the present high incidence of dogs off leads west of Mullum</i>	Council				

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	<i>Mullum Creek, bearing in mind that even dogs on lead displace birds more than humans alone.</i>					
26	<u>Millers Pond – Mosquito Fish</u> <i>If Millers Pond reduces to a puddle (as seems possible in the current drought), rescue whatever native aquatic fauna are evident (e.g. tadpoles). If it appears likely that the pond will dry up completely, the mosquito fish can be left to die out. Otherwise, an ichthyocide (fish poison) could be introduced to kill the mosquito fish. Any rescued fauna should be reintroduced when the pond holds water again.</i>	Council	\$1,000			
27	<u>Monitoring</u> <i>Establish a program to monitor items or objectives that the forthcoming management plan aims to maintain or improve, e.g. vegetation condition at specific locations, populations of significant plants, or particular weed infestations.</i>	Council, Melbourne Water	\$3,000	\$500	\$500	\$500
28	<u>Miscellaneous</u> <i>Carry out a survey of bats by an expert in that field.</i>	Council, Field Naturalist Club			\$2,000	
	Fire Management					
29	<u>Regulate Fire Use</u> <i>Prohibit all fires and solid fuel BBQs within the reserve during the declared Fire Danger Period.</i>	Council				
30	<i>Provide signs at Reynolds Road, Limassol Court,</i>	Council	Refer to			

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	<i>Orchard Grove, Heidelberg - Warrandyte Road, Larnoo Drive entrances re above (Item 1 on Figure 6).</i>		Recommendation No. 112			
31	<i>Provide signs at Conference Room/Environment Centre and both car parks re above (Item 1 on Figure 6).</i>	Council	Refer to Recommendation No. 112			
32	<i>Update and/or amend the relevant Local Law regarding the above actions.</i>	Council				
33	<u>Isolate Known Ignition Sources</u> <i>Maintain area around the Conference Room/Environment Centre in a minimal fuel state (Item 3 on Figure 6).</i>	Council				
34	<i>Investigate the possibility of and requirements to safely retain the open fire place near the Conference Room and Environment Centre.</i>	Council	\$500			
35	<u>Discourage Arson</u> <i>Request that CFA investigate all unplanned fires.</i>	Council, CFA				
36	<u>Facilitate First Attack Fire fighting</u> <i>Maintain existing access points into the park (Item 4 on Figure 6).</i>	Council				
37	<i>Remove fallen branches with fine fuel from within 5 metres of either side of the track and roads; consider relocation within the park to retain ecological benefits (Item 4 on Figure 6).</i>	Council				
38	<i>Maintain access to existing water hydrants.</i>	Council				
39	<i>Investigate reliability of existing dams during summer</i>	Council				

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	<i>period.</i>					
40	<u>No Person Should Suffer Injury Or Lose Their Life From Wildfire In The Reserve</u> <i>Regulate use of the reserve. Provide signs at Reynolds Road, Limassol Court, Orchard Grove, Heidelberg - Warrandyte Road, Larnoo Drive entrances closing the park on Total Fire Ban days (Item 5 on Figure 6).</i>	Council	Refer to Recommendation No. 112			
41	<i>Signage at Conference Room/Environment Centre and both car parks advising that the park will be closed on Total Fire Ban days (Item 5 on Figure 6).</i>	Council	Refer to Recommendation No. 112			
42	<u>Facilitate Safe Evacuation Or Shelter In Place</u> <i>Erect directional signs as appropriate (Item 6 on Fig 6)</i>	Council	Refer to Recommendation No. 112			
43	<u>Reduce Potential For Flame And Radiant Heat Damage To Build Assets</u> <i>Western boundary of Mullum Mullum Creek Linear Park (Currawong Stretch)</i> <i>Maintain current mowing regime (Item 7 on Figure 6).</i>	Council				
44	<i>Create a 3 metre FMZ2 behind houses on Nartanda Court and Mullum Place in which elevated fuel is at most sparse and depth of leaf litter less than 10 mm (Item 8 on Figure 6).</i>	Council				\$3,000
45	<u>Eastern boundary of Currawong Homestead Block</u> <i>Maintain existing vegetation management beneath high voltage transmission lines (Item 2 on Figure 6).</i>	Council, SP AUSNET				
46	<i>Maintain current mowing along track from Limassol</i>	Council				

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	<i>Court (Item 10 on Figure 6).</i>					
47	<i>Create a 3 metre wide FMZ2 adjacent to the rear fence of houses in Limassol Court (Item 11 on Figure 6) and Glamis Street (Item 12 on Figure 6) in which elevated fuel is at most sparse and depth of leaf litter less than 10 mm.</i>	Council				\$5,000
48	<i>Monitor establishment of elevated fuel within 10 metres of eastern boundary and maintain as sparse cover (Item 16 on Figure 6).</i>	Council				\$2,000
49	<u><i>Environment Centre & Conference Room</i></u> <i>Maintain a 10 metre wide inner zone around the buildings in which the litter layer is maintained at less than 10 mm, grass is cut to less than 100 mm and monitored for regrowth during the Fire Danger Period, and elevated fuels are removed (Item 13 on Figure 6).</i>	Council				
50	<i>Beyond the inner zone, maintain a 15 metre wide outer zone in which elevated fuel is at most sparse (Item 14 on Figure 6).</i>	Council				
51	<i>Target adjacent private properties to the east of the reserves for annual fire hazard inspection by MFPO and stipulate maintenance of appropriate WMO inner and outer zone standard vegetation management.</i>	Council				
52	<u><i>Reduce Potential For Ember Ignition Of Built Assets</i></u> <i>Reduce bark fuel hazard through burning or hand removal along the eastern boundary near Limassol Court (Item 11 on Figure 6).</i>	Council				Refer to Recommendation No. 40.
53	<i>Target all adjacent private properties for CFA and/or</i>	CFA, Council				

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	<i>Council community education programs.</i>					
54	<u>Fire Protection Works To Minimise Environment Impact Where Compatible With Safety Objectives</u> <i>Continue woody weed removal.</i>	Council				
55	<i>Time mowing, slashing etc. to favour desired species where possible.</i>	Council				
56	<i>Undertake post-fire monitoring and weed control as required.</i>	Council				
57	<i>It is desirable for fire suppression to use existing roads as control lines where safe and practical in order to limit machinery use within the reserve</i>	CFA				
58	<i>Liaise with other relevant land management agencies in relation to their fire management responsibilities within the park.</i>	Council, Melb Water, SP AUSNET, Parks Victoria etc.				
59	<u>Plan To Manage Fire Spread Beyond The Reserve</u> <i>Seek to integrate fire prevention works with neighbouring land managers, e.g. SP AusNet, Melbourne Water and Parks Victoria.</i>	Council, Melb Water, SP AUSNET, Parks Victoria etc.				
60	<i>Include consideration of the Currawong Bush Park and Mullum Mullum Creek Linear Park (Currawong Stretch) in relevant landscape scale wildfire management plan.</i>	Council				
	Waterway Management					
61	<u>Mullum Mullum Waterway Management Activity Plan</u>	Council, Melbourne				

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	<i>That Council liaise with Melbourne Water on a regular basis to ensure that there is a co-ordinated approach to the management of environmental, recreational and other values of the Mullum Mullum Creek corridor.</i>	Water				
62	<i>That Council support Melbourne Water's continued waterway management role for the bed and banks of the Mullum Mullum Creek, including weed control, revegetation and stream stabilisation programs.</i>	Council, Melbourne Water				
63	<i>That Council progressively implement the key management recommendations from the Mullum Mullum Waterway Activity Plan that are Council's responsibility.</i>	Council				
64	<u>Currawong Bush Park – Outflow Pipes</u> <i>That a wetland comprised of a series of sediment ponds and reed beds be designed and built for the Arnold Drive (Donvale) outflow pipe, to improve water quality entering the Mullum Mullum Creek. Ancillary vegetation improvement works around and in the sediment ponds will improve vegetation values in the degraded area.</i>	Council, Melbourne Water	\$250,000			\$2,500
65	<i>That a sediment pond be investigated for Amersham Drive, Warrandyte, to improve water quality entering Mullum Mullum Creek</i>	Council, Melbourne Water				
66	<i>That management and maintenance documentation for St Muir Drive and any new assets built in Arnold Drive or Amersham Drive be provided to the Parks and Recreation and Economic and Environmental Planning Departments for reference.</i>	Council, Melbourne Water				
67	<u>Bridges and Waterway Crossings</u> <i>That the development of shared pathways and waterway crossings within the Currawong stretch of the MMCLP</i>	Council, Melbourne Water				

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	<i>be undertaken in consideration of the Melbourne Water "Shared Pathways Guidelines".</i>					
	Recreation Use					
68	<u>Walking</u> <i>To install and/or upgrade the trail network within the Currawong Bush Park in accordance with the minor path upgrade recommendations detailed in Figure 7.</i>	Council		\$15,000		
69	<u>Cycling</u> <i>To endorse and support the continued implementation of the Bicycle Strategy 2001 (and associated Supplement Action Plan 2006) in relation to the Currawong stretch of the MMCLP, with the exception of additional cycling routes within Currawong Bush Park.</i>	Council				
70	<i>That existing cycling regulations in Currawong Bush Park be retained; that cycling is permitted only on vehicle tracks.</i>	Council				
71	<i>That mountain bike riders be discouraged from using the Currawong Bush Park by management ensuring regular removal of newly erected jumps and increased park inspections to monitor usage.</i>	Council				\$2,000
72	<u>Horse Riding</u> <i>That prior to the development of any horse riding trails into the Currawong Bush Park, a feasibility study be undertaken to address environmental and management considerations including: management/maintenance responsibilities, ecological values, trail alignment, rider destinations, soil types, drainage, road safety, sight lines and trail surfacing.</i>	Council				

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
73	<u>Play</u> <i>That the need for additional play equipment in the Habitat Park Drive, Doncaster East estate be monitored according to changes in neighbourhood characteristics and associated park usage patterns</i>					
74	<u>Dog Walking</u> <i>That regular dog patrols be undertaken within the Currawong stretch of the MMCLP to address incidents of dogs in unauthorised areas.</i>	Council				
75	<i>That appropriate signage is erected at all entrances throughout the Currawong stretch of the MMCLP to inform park users of the designated dog control areas.</i>	Council	See Recommendation No. 112			
	Infrastructure and Facilities					
76	<u>Mullum Mullum Creek Linear Park Trail</u> <i>That a 1.5 metre asphalt foot path be constructed along the connector trail (which is between No 28 – 30 Larnoo Drive, Doncaster East) to the main MMCLP trail.</i>	Council	\$8,500			\$1,000
77	<i>That an appropriate linkage trail be constructed from the MMCLP Trail (western bank) to the new bridge crossing on the Mullum Mullum Creek.</i>	Council		\$24,000		\$1,700
78	<i>That a 2.5 metre asphalt shared path be constructed from the entrance of Larnoo Drive Reserve to the MMCLP trail.</i>	Council	\$60,000			\$4,200
79	<i>That the asphalt path from Deep Creek Drive, Doncaster East to the MMCLP trail be widened to 2.5 metres to accommodate shared usage.</i>	Council		\$20,000		

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
80	<i>That certain sections of the shared path along the MMCLP be realigned and rock beaching installed to address alignment and set back issues between the pathway and creek bank.</i>	Council / Melbourne Water	\$20,000			
81	<i>That all trail improvements and/or upgrades along the MMCLP Trail be undertaken in accordance with Council's Urban and Park Design Guidelines.</i>					
82	<i>That management regularly monitor the condition of the shared path network throughout the Currawong stretch of the MMCLP to maintain effective drainage and resurface where necessary.</i>	Council				
83	<i>That a footbridge, with an associated connecting trail/board walk into the Currawong Bush Park, be constructed across the Mullum Mullum Creek on the northern side of Reynolds Road.</i>	Council	\$300,000			\$2,500
84	<i>That the footbridge be planned and developed in accordance with Council's "Urban and Park Design Guidelines" and Melbourne Water's "Shared Pathways Guidelines".</i>	Council				
85	<i>That the placement and design of signage posts along the horse riding trail adjacent to the MMCLP trail be reviewed and upgraded to ensure that the trail is clearly marked out for the rider and adjoining users of the MMCLP trail.</i>	Council				
86	<i>That Council Officers investigate provision of appropriate measures to highlight the presence of water risk and the associated need for appropriate supervision, without restricting physical or visual access or unduly restricting play opportunities near the Larnoo Playspace.</i>	Council	\$15,000			\$500

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
87	<i>That appropriate warning signs be installed at the Larnoo Drive Reserve Playground to alert parents to the presence of a water body at the rear of the play area.</i>	Council	See Recommendation No 112			
88	<i>That an investigation of the drainage system of the Mullum Mullum Wetlands be undertaken to assess their functionality.</i>	Council, Melbourne Water		\$2000		
89	<i>That the wooden footbridges adjacent to the Mullum Mullum wetlands (Larnoo Drive) be replaced and upgraded to address safety and maintenance issues.</i>	Council	\$12,000			
90	<u>Currawong Bush Park Trail Network</u> <i>That a crushed rock path be constructed at the rear of the Environment Centre in Currawong Bush Park to create a link from the footbridge to the Centre.</i>	Council	\$11,000			\$1,000
91	<i>That steps and an unsealed reserve pathway (crushed rock) be constructed from Glamis Street (Warrandyte) into the Currawong Bush Park.</i>	Council	\$12,000			\$700
92	<i>That an unsealed reserve pathway (crushed rock) be constructed from Amersham Drive (Warrandyte) into the park.</i>	Council			\$10,000	\$1,200
93	<i>That an unsealed reserve pathway (crushed rock) be constructed from Bellbird Place (Warrandyte) to link up with the existing management vehicle track in the northern section of Currawong Bush Park.</i>	Council	\$30,000			\$3,500
94	<i>That the unsealed reserve management road from Orchard Grove (Warrandyte) is upgraded to address the poor surface.</i>					
95	<i>That the surface of the management vehicle/walking</i>	Council	\$30,000			\$1,800

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	<i>track from Glamis Street and Arnold Drive, Warrandyte be upgraded to address drainage issues i.e. boggy ground.</i>					
96	<u>Currawong Bush Park - Environmental Centre</u> <i>That orientation and interpretive panels be installed at the front of the Environment Centre to improve the level and extent of information on the park provided to visitors.</i>	Council	\$10,000			
97	<u>Currawong Bush Park - Conference Room</u> <i>That a disabled toilet is installed for the Conference Room/Ranger's Residence and associated facility upgrades are undertaken to accommodate disabled access.</i>	Council		See Recommendation No. 90 below		
98	<i>That the Conference Room be upgraded to ensure better utilisation of the internal space to accommodate additional users and to address safety and access issues.</i>	Council		\$60,000		
99	<i>That the kitchen facilities for the Conference Room/Ranger's Residence be upgraded to provide catering facilities for hire groups.</i>	Council		See Recommendation No. 90		
100	<u>Currawong Bush Park - Old Ranger's Residence</u> <i>That an Expression of Interest be advertised throughout the municipality to identify appropriate community groups who may be interested in using the Ranger's Residence within the Currawong Bush Park.</i>	Council				
101	<i>That occupancy agreements be developed and entered into with all permanent tenants/users of the facilities at Currawong Bush Park including consideration of risk</i>	Council				

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	<i>issues.</i>					
102	<u>Currawong Bush Park - Disabled Access</u> <i>That a designated disabled car park should be provided close to the Conference Room / Environment Centre.</i>	Council	\$500			
103	<i>That the Conference Room at Currawong Bush Park should be upgraded to accommodate disabled access i.e. toilets, doorways etc.</i>	Council	See Recommendation No. 99			
104	<u>Currawong Bush Park - Public Vehicle Access & Car Parking</u> <i>That parking signs in the Currawong Bush Park be reviewed to maximise car parking spaces at peak visitor times.</i>	Council				
105	<u>Currawong Bush Park - Main Entrance</u> <i>That electronic gates be installed with automatic timers at the main park entrance (Reynolds Road) to Currawong Bush Park.</i>	Council	\$35,000			
106	<u>Currawong Bush Park - Picnic Ground</u> <i>That more time be invested into the vegetation (and rabbit control) in and immediately around the picnic ground to achieve a more 'cared for' look</i>	Council	\$1,000	\$1,000	\$1,000	\$1,000
107	<i>That further planting of an indigenous, grassy understorey and herbaceous species should be undertaken in the picnic ground at Currawong Bush Park once effective rabbit control is achieved.</i>					
108	<i>That the continued development of the picnic ground be supported by installing additional features to improve its amenity i.e. environmental sculpture / artwork and</i>	Council			\$5,000	

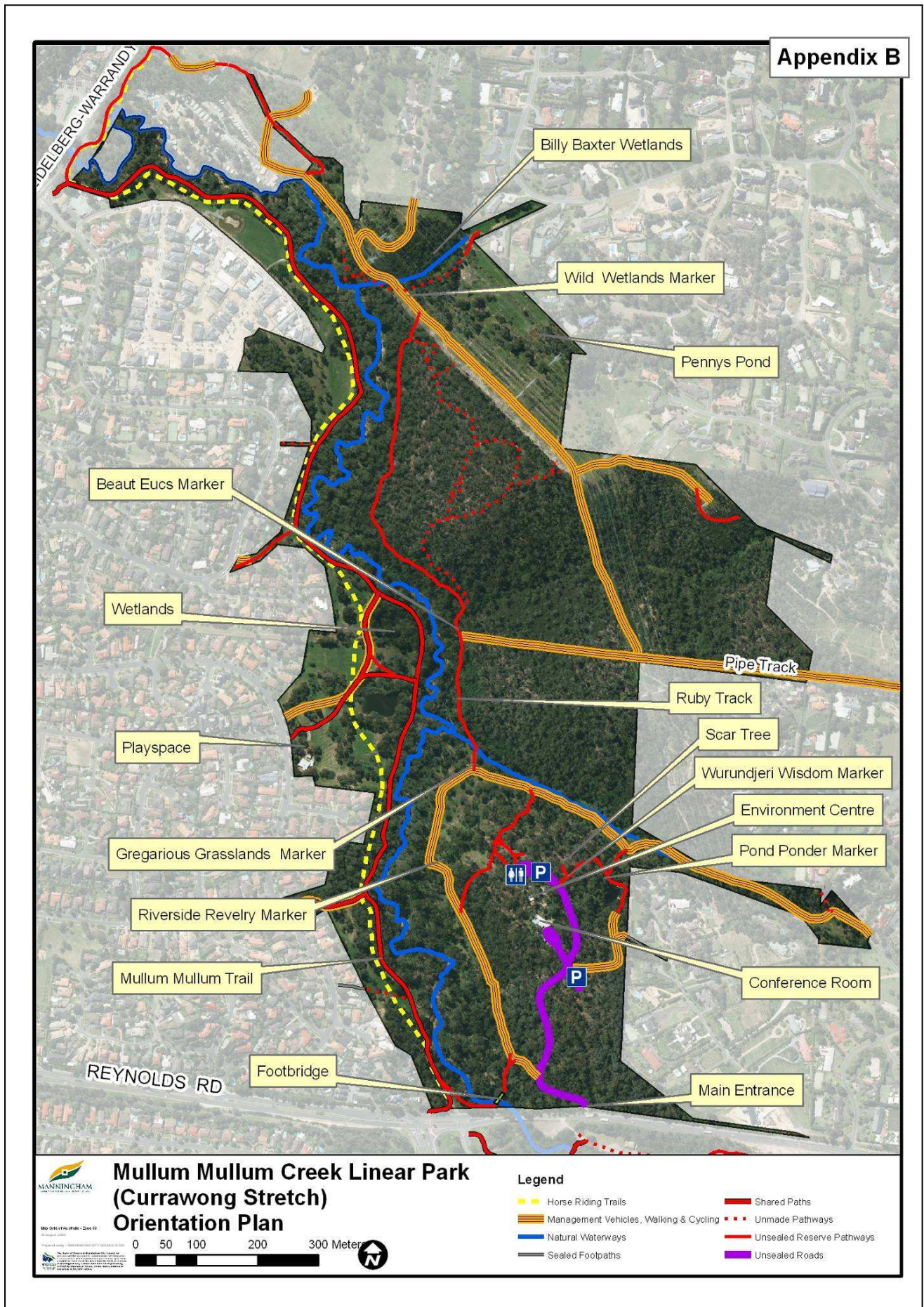
Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	<i>seating.</i>					
109	<i>That the Currawong Bush Park be considered as an appropriate site for the installation of community art projects, with the aim to increase a sense of community identity and local ownership, create aesthetic and possibly educational visual interest, and support community cultural development projects.</i>	Council				
110	<u>Currawong Bush Park - Campsites</u> <i>That camping groups in Currawong Bush Park continue to be restricted to a maximum size of 12 persons to prevent the disturbance caused by large groups.</i>	Council				
111	<i>Promote camping at Currawong Bush Park as a relatively unique recreational opportunity in Manningham.</i>					
112	<u>Currawong Bush Park - Wildlife Enclosure</u> <i>That the fencing, signage and associated infrastructure of the "wildlife enclosure" in the Currawong Bush Park be removed to return the area back to natural bushland and to provide unimpeded access along the habitat corridor.</i>	Council		\$9,000		
113	<u>Currawong Bush Park - Millers Pond</u> <i>That the boardwalk at Millers Pond be removed to address safety and maintenance problems.</i>	Council		\$3,000		
114	<i>That a structural assessment of the jetty at Millers Pond be undertaken and if considered sound, the jetty be upgraded and redesigned to address existing safety issues i.e. lack of safety railings and height of structure above water level.</i>	Council	\$15,000			\$1,500

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
115	<i>That a guide fence be installed, to direct people along the pathway to the jetty viewing platform.</i>	Council	\$1,000			
116	<u>Currawong Bush Park - Billy Baxter Wetlands</u> <i>That additional interpretive signage at the Billy Baxter Wetlands is installed to educate the public about the purpose and benefit of the wetlands to the surrounding bushland.</i>	Council	\$3,000			
117	<u>Pipe track – Melbourne Water</u> <i>That Council enter into a formal agreement with Melbourne Water for use of the Melbourne Water Pipe Track for the shared path alignment, including designation of liability and maintenance of the Pipe Track and clarify future maintenance responsibilities of the Pipe Track.</i>	Council				
118	<i>That Council undertake on-going vegetation maintenance, such as grass cutting and weed control of the Melbourne Water Pipe Track in accordance with the agreement.</i>	Council				
119	<u>Park Furniture</u> <i>That additional seating is installed throughout the Currawong stretch of the MMCLP and within Currawong Bush Park at key access and viewing points.</i>	Council	\$5,000	\$5,000		\$500
120	<i>That drinking fountains be installed at suitable locations along the Currawong stretch of the MMCLP trail e.g. playground at Larnoo Reserve.</i>	Council		\$6,000		
121	<u>Signage</u> <i>That all new signage for the MMCLP is to be developed in accordance with the Manningham City Council</i>	Council				

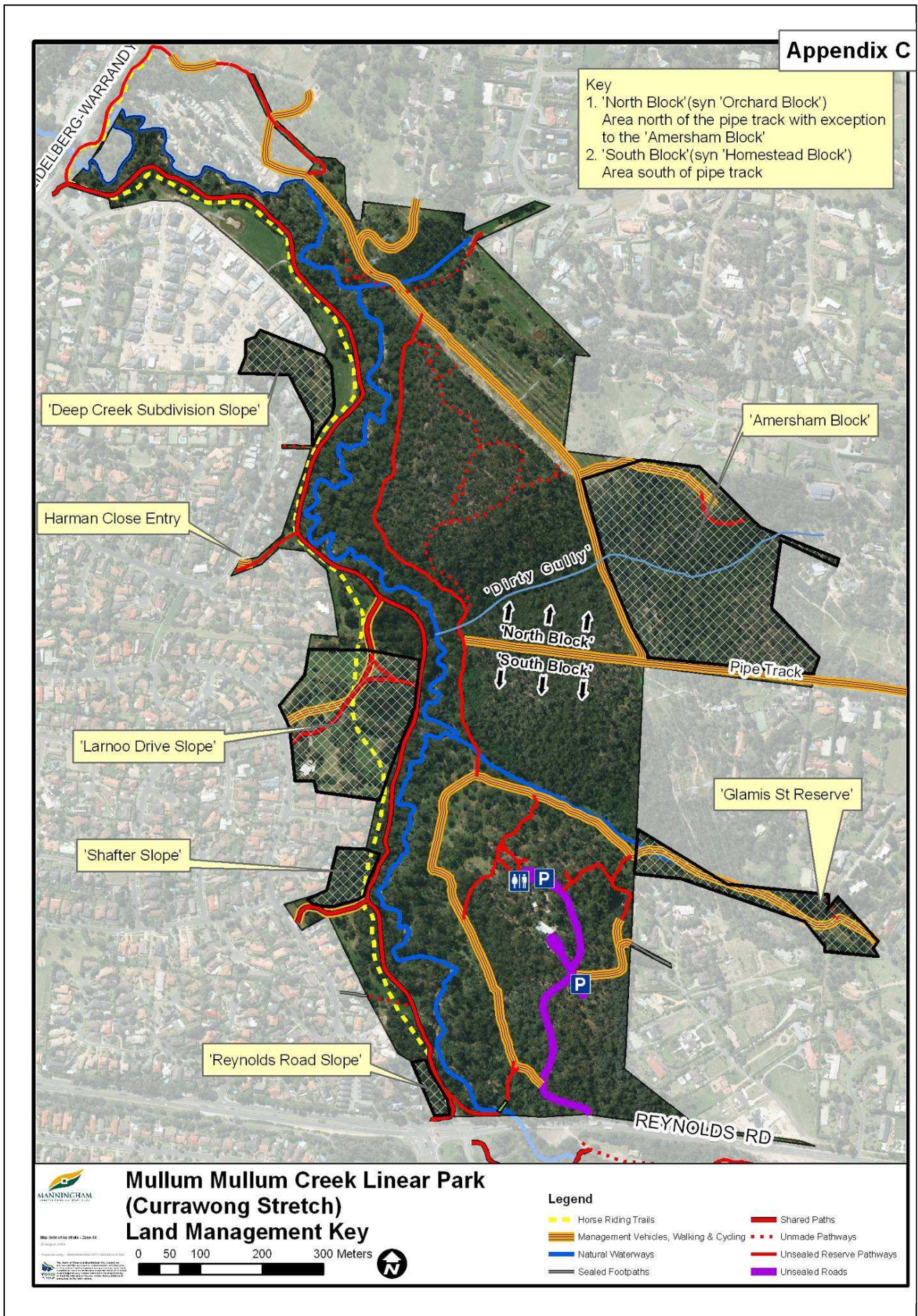
Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	<i>"Outdoor Signage Guidelines".</i>					
122	<i>That existing signage within the study area be upgraded and/or rationalised where considered necessary to improve communication.</i>	Council	\$40,000			\$2,000
123	<u>Currawong Bush Park - Interpretation Signage</u> <i>That an Interpretation Plan be developed for the Currawong Bush Park.</i>	Council	\$8,000			
124	<u>Fencing - Currawong Bush Park</u> <i>That the old wire fencing should be removed from the Currawong Bush Park in the sections highlighted in Figure 7.</i>	Council	\$2,000			
125	<i>That appropriate, additional fencing be installed to delineate the boundaries of the Currawong Bush Park at the locations sited in Figure 7.</i>	Council			\$30,000 (on request)	
126	<i>That the installation of any additional boundary fencing within Currawong Bush Park only be undertaken in response to written requests from adjacent land owners.</i>	Council				
127	<i>That gateways be installed at the Glamis Street/Arnold Drive (Warrandyte) and Bellbird Place (Warrandyte) entrances to the Currawong Bush Park.</i>	Council	\$6,000			
128	<u>Fencing - Mullum Mullum Creek Linear Park Trail</u> <i>That all loose fence wire in the Currawong stretch of the MMCLP trail be removed and reinstated with "sighter wire" where necessary to protect vegetation and to direct horse riders.</i>	Council	\$6,000			

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
129	<p><u>Land Zones – Currawong Bush Park</u></p> <p><i>That the Frank Street Road Reserve (Warrantyte), in the northern section of the Currawong Bush Park, be formally closed and rezoned to a Public Conservation and Resource Zone.</i></p>	Council				
130	<p><u>Land Zones – Mullum Mullum Creek Linear Park Trail</u></p> <p><i>That the public open space at 19 and 100a Habitat Park Drive, Doncaster East be rezoned to Public Conservation and Resource Zone (PCRZ).</i></p>	Council				
131	<p><i>That the Urban Floodway Zone (UFZ) that applies to 19 and 100a Habitat Park Drive, Doncaster East be removed.</i></p>	Council				
	Management					
132	<p><u>Monitoring, Coordination and Management</u></p> <p><i>That an annual meeting is held with all the responsible departments/units across Council to discuss the progress of the management plan, identify any new issues that may have arisen over the previous twelve months and to discuss any suggested strategies to address these.</i></p>	Council				
133	<p><i>That Council consult with key stakeholders, community groups and adjoining landowners in the ongoing development, monitoring and management of the MMCLP (Currawong Stretch).</i></p>	Council				
134	<p><i>That Council investigate opportunities for future sources of funding for the development and ongoing maintenance of the MMCLP, including State</i></p>	Council				

Rec No	Recommendation	Agency	Stage 1	Stage 2	Stage 3	Operational Budget
	<i>Government capital works grants.</i>					
135	<i>That a review of the MMCLP (Currawong Stretch) Management Plan be carried out 5 years after the completion of the capital works recommended in this plan.</i>	Council				
136	<u>Currawong Bush Park - Ranger's Residence</u> <i>That a formal agreement be entered into with the Wildlife Care Network until such time as a permanent tenant(s) or use is decided for the Old Ranger's Residence.</i>	Council				
137	<i>That the Facilities Management Team take formal responsibility for the day to day management of the Rangers House including: cleaning, maintenance, security and use by permanent or casual hirers (internal or external).</i>	Council				
138	<u>Promotion and Marketing</u> <i>That a new brochure is developed to promote the natural features and assets of the Currawong Bush Park and its location upon the Mullum Mullum Creek Linear Park trail.</i>	Council	\$5,000			
139	<i>That Council's updated cycling and walking brochures incorporate information within them about the Mullum Mullum Creek Linear Park Trail and associated facilities i.e. playgrounds, picnic areas etc.</i>	Council				
	TOTAL MANAGEMENT PLAN COST		\$677,870	\$479,970	\$92,970	\$66,370
	GRAND TOTAL		\$1,250,810			



Appendix B – Oriendation Plan



Appendix C – Land Management Key